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bulletin

What will this election mean to Canadian universities? What has the Conservative government done which affects the university community? What do the Liberal and New Democratic parties promise?

Last May the CAUT ran a special issue on the general election and, in conjunction with its friends and allies in the Canadian Federation of Biological Sciences and the Social Science Federation, polled many of the candidates on their views. What did the parties say at the time and what has happened since then?

First, the question of research funding. Last May all parties expressed concern over Canada's research and development capabilities in government, the universities and the private sector. All parties proposed increasing this effort: the Liberal Party proposed a level of 1.5% GERD/GNP by 1983, the Conservative Party proposed a level of 2.5% GERD/GNP by 1985, the New Democratic Party proposed a level of 2.5% GERD/GNP by 1983, and the Social Credit Party proposed a level of 2.5% GERD/GNP without a specified time frame.

What has the minority Conservative government done since May 22nd? In a speech to the Chemical Institute of Canada in Toronto on November 1st, the new Minister of State for Science and Technology, the Hon. Howard Graffey outlined the general policy approach of the government. He reiterated the government's commitment to a dramatic increase in research and development. He stressed the importance of the private sector but indicated the significance to the government of the work of the universities and of the government laboratories. He noted the necessity to undertake both applied and basic research. He also recognized that without an increase in university training programmes there would be a shortage of scientists in Canada to meet the goals of the government.

The government inherited from its Liberal predecessor plans to create five-year funding arrangements for the three granting agencies which provide much of the funding for university research — the Medical Research Council, the Natural Sciences and Engineering Research Council, and the Social Sciences and Humanities Research Council. Before its defeat the government had circulated two of these plans, those for NSERC and SSHRCC. It had announced but not tabled an increase of 32% in the funding for the coming year for NSERC but had made no funding announcements for the other two councils. It had adopted the NSERC five year plan which, apart from the initial increase for the coming year, provided disappointing funding for this Council.

The Medical Research Council's (MRC) Five Year Plan was studied by the cabinet and returned to MRC for re-evaluation. No decision was reached regarding funding for the MRC. This situation is particularly critical since the MRC peer review panels may well be meeting in February without the knowledge of the level of funding the MRC has to work with unless the government provides interim funding.

To the surprise of many observers, the

Once more into the maze Election 1980

by Donald C. Savage

budget which was defeated did not contain large incentives to the private sector to undertake research and development. The Minister of State for Science and Technology explained to a delegation of the CAUT, CFBS and the Canadian Association of Physicists that the government had decided against a general tax concession in this area and now preferred specific targets which might be met by grants or by tax concessions. At that meeting the Minister indicated that he had strongly pressed the view on the cabinet that financial arrangements with multinational corporations should be conditional on the undertaking of research and development work in Canada. One such arrangement was the proposed bail-out of Chrysler Canada where the corporation did no research and development work in this country.

A second major area of CAUT concern for a number of years has been freedom of information legislation. The CAUT has

found on many occasions that the obsessive secrecy of the federal government inhibited effective lobbying on behalf of the university community. For instance on the last two occasions when the federal government negotiated changes in the transfer payment arrangements with the provinces which, among other things, provide massive amounts of money for postsecondary education, they refused to make available as a right the background studies paid for by the taxpayers or to discuss the possible impact of the changes on the university community. Similar secrecy shrouded the cases of academics who were denied entry into Canada by the Liberal government, notably Professors Meszaros and Gunder Frank.

The Conservatives and the New Democratic Party both favoured freedom of information legislation during the May 22nd election. The Conservatives placed the matter in the hands of the Hon. Walter Baker who tabled legislation in the House of

Commons in November. This legislation was markedly different from the proposals of the previous Liberal government which had always insisted that appeals concerning denials of information could only be made in the final event to the minister concerned who had presumably authorized the original denial. The Conservative proposals provided for appeals to a parliamentary commissioner and, if necessary, the courts — the essential cornerstone of effective legislation in the eyes of the CAUT. The CAUT was to testify concerning this legislation in January. The nub of the testimony would have been to welcome the bill, to suggest that the exemptions should be reworded (in particular that the general category of federal/provincial relations should be drastically curtailed), and that the language should be altered to ensure that illegal acts could not be protected through this legislation. In addition the CAUT supported the views of the Social Science Federation that a specific amendment had to be made to ensure access to data by scholars and those of the Canadian Historical Association that the bill should be amended to make it clear that materials already open in the archives would not now be closed. Amendments to the list of exemptions were strongly supported by the New Democratic Party, and also seemed likely to be supported by Gerald Baldwin, the retiring Conservative M.P. for Peace River. All parties expressed support for the position of the Social Science Federation and of the Canadian Historical Association.

On another front the Conservative policy appeared vague and confused, namely the proper role of the R.C.M.P. The CAUT has campaigned for over twenty years

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Graphic — Tom MacDonnell



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Election 1980

concerning the role of the R.C.M.P. on the campus. While this precise issue did not surface during the tenure of the new government, related matters did. In the summer the CAUT wrote to the Solicitor-General complaining about a reported statement of his that decisions of the Solicitor-General concerning what was and what was not subversive should not be reviewed by the courts. This statement, however, was superseded by the decision of the government to introduce a comprehensive freedom of information bill which would, among other matters, repeal the sections of the Federal Court Act which allowed the ministers to legally prevent judicial review of their actions.

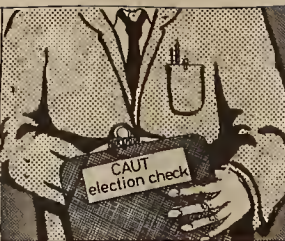
On another front the Prime Minister and the Solicitor-General were decidedly unclear concerning proposals to allow the R.C.M.P. to break the law on occasion. In the May 22nd campaign Mr. Clark stated that such transgressions should be allowed if they are reported to a Minister and to a parliamentary security committee. At the beginning of October the Solicitor-General announced that this promise would be implemented. In November he told the Commons that this would not be proceeded with but that the rule of law would be paramount. A few days later the Prime Minister stated that he wanted to give the R.C.M.P. extraordinary powers to protect national security which seemed to indicate that the government would transform previously illegal acts into legal ones by the device of the parliamentary security committee.

The New Democratic Party has been the only party to consistently support the views of the CAUT in this area.

Prior to the May 22nd election the CAUT had vigorously opposed the attempts of the Liberal government to introduce changes in the obscenity legislation which would, in the opinion of the CAUT, give legal sanction to those vigilante groups which want to ban the works of literature and art. Although it was alleged that this legislation was designed to ban pornographic photo magazines, particularly those exploiting children, the bills introduced by the Liberals in fact so extended the law that much of the literary and artistic heritage would have been open to attack. The CAUT did support the original intention of the Liberals, before they caved in to yahoo pressure, to introduce an amendment to the criminal code explicitly prohibiting the procuring of children for sexual acts for the purpose of photographic reproduction. All parties have been somewhat ambiguous, if not timorous, on this general question.

The appointment of Senator Flynn as Minister of Justice turned out to be a signal victory for civil liberties in Canada. In a number of forthright speeches the Minister indicated that he did not approve of continuous extensions of the criminal code to try to enforce particular social views. He thought that other instruments of a less draconian kind such as the powers invested in municipalities should be used if particular communities wish to ban certain actions or activities. He refused to reintroduce the previous legislation on obscenity despite considerable pressure from the caucus and announced that obscenity would be addressed in a general review of the criminal code which he was initiating and which would take a number of years to come to fruition.

On the immigration front, the Hon. Mr. Atkey has dramatically reversed the policies of the Liberal government which regularly banned academics from this country without reasons other than the vague prescription of national security. The previous minister, the Hon. Mr. Cullen, had continued the long-standing Liberal vendetta against Professor Andre Gunder Frank. Mr. Atkey admitted him to the country to attend a Congress in Vancouver and to visit friends. He also reversed departmental decisions in regard to two other academics, one at Brandon, and the other at the Ecole Polytechnique. He met a



delegation of the CAUT and the Social Science Federation and promised that he would seriously consider administrative regulations to set up a proper appeal mechanism to ensure that such cases were handled more fairly in the future. In another area of his jurisdiction he indicated that he would not proceed with the idea of banning foreign students from teaching assistant jobs in this country. In the Commons the NDP has consistently supported CAUT positions on immigration.

CAUT has had some concerns about Conservative attacks on Statistics Canada. These concerns take two forms. First Statistics Canada has for a long time run a useful service providing salary data about university faculty. Secondly Statistics Canada collects data in areas such as the administration of justice, health and the like

which, if curtailed, would prevent precisely that type of applied social science research which the politicians are always calling for. To date the attacks have focused on other aspects of Statistics Canada, and the President of the Treasury Board created an inquiry into the management of the department. Drastic cuts in funding could, however, seriously curtail these useful functions of Statistics Canada.

In the last election the CAUT, CFBS and SSF mounted a major campaign in many constituencies across the country in which local associations asked the candidates a series of questions on a broad variety of issues. It seemed to CAUT that it was too soon after the May election to re-issue the entire questionnaire to the parties and their candidates. Thus a shortened series of questions on research funding, freedom of information, and the established programmes (fiscal transfers) have been drawn up and submitted to the parties and will be used in certain of the university constituencies. The response of the parties can be seen elsewhere in this edition. So too can the list of university constituencies with the results from the previous election. The CAUT Relations with Governments Committee hopes that members will brave the blizzards, attend party meetings and ask questions on those matters which affect the university community.

Dr. Savage is Executive Secretary of the CAUT.

caut acpu

Appeal for funds

J. H. STEWART REID MEMORIAL FELLOWSHIP TRUST FUND

The Fund was established to honour the memory of the first Executive Secretary of CAUT who served in that capacity from 1959 to 1963 and who died in office.

The Fund has awarded an annual scholarship since 1969 for postgraduate work at a Canadian university for a Canadian citizen or landed immigrant. The current value of the scholarship is \$4,500.

Funds are needed to maintain the value of the scholarship and to increase the scope of the programme.

All contributions are tax deductible. Receipts for tax purposes will be sent to donors. All administrative costs are met by CAUT and all contributions are directed to the scholarship fund.

The trustees also urge you to consider a bequest to the Fund.

The trustees of the Fund are: Professors Edward Mahrt (Chairman), Administration, New Brunswick; Howard McCurdy (Biology, Windsor), and Percy Smith (Drama, Guelph).

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Eureka! More gov't money for NSERC and a plan for how to spend it

by John Kucharczyk

On November 15 the Minister of State for Science and Technology, Howard Graffley, announced federal government approval "in principle" for a Five-Year Plan for the Programs of the Natural Sciences and Engineering Research Council and a budgetary increase for NSERC in fiscal 1980-81 of \$39 million. The 32 per cent increase "is far in excess of the expected growth of the government's overall budget and indicates clearly the high priority this government attaches to research and development," the Minister stated at a press conference convened the same day.

Mr. Graffley also said that a decision on funding levels for the remaining four years of the Plan will be made "in a few months when the government will be in a better position to estimate overall revenues and expenditures for that period. The government fully appreciates the need for the Council to have this assurance of financial stability in order that individual researchers, groups and institutions can make the necessary long-term commitments involved in a research undertaking," he added.

The five-year plan compiled by NSERC President, Gordon MacNabb, and the 22 members of his Council is itself detailed in a complex 102-page document which begins by describing the now well-known past trends in university R & D funding, and concludes by proposing three possible "Alternatives" for financing NSERC's programs during the period 1980-81 through 1984-85.

The initiatives identified in the Plan cover four general but strongly interdependent areas of activity.

1. "The National Need for Trained Researchers".

NSERC's analyses of the manpower required for its own programs suggest that almost 26,000 new researchers will be needed by 1983 to meet a 1.5% Gross Expenditures on R & D (G.E.R.D.)/Gross National Product (G.N.P.) target; half of these would require specialized research training at the post graduate level.

Comparison of the total annual projections of demand and supply in all fields of research proposed in the Plan over the next five years shows that the annual supply is at least 15% below the projected demand for post graduates. The document also states that even if a considerable margin of error is allowed for, the mismatch between demand and supply in the Applied Sciences and Engineering, and in the Physical Sciences, represents a shortage as great as

one-third of the requirements in each year of the five year period:

The forecast supply of Masters and Doctorates in the Applied Sciences and Engineering is only about one-half to two-thirds of the requirement, representing a deficit of about 700 Masters and 200 Doctorates per annum;

• The forecast supply of Masters in the Physical Sciences and Mathematics is in line with projected requirements. The supply of Doctorates, however, is only about one-half to two-thirds the number required, representing a shortfall of about 300 Ph.D.'s per annum.

The NSERC plan proposes a broad-ranging program of scholarships, fellowships and research associateships which would be tenable in both universities and industry. Twenty-eight per cent of the overall anticipated growth in NSERC's program is associated with these manpower expenditures, which under financing "Alternative 1" would increase from the current \$13 million to \$79 million in 1984-85. The awards and employment programs themselves would extend at least to the mid 1990's.

Program proposals to deal with the research manpower problem start at the undergraduate level, with NSERC providing funds to the universities and industry specifically for increased support of sum-

mer laboratory assistants drawn from third and fourth year students. As well, a system of University and Industrial Research Bursaries for undergraduates is called for, with the number of bursaries per university being based on the number of NSERC operating grant recipients. The Industrial Research Bursaries would be worth \$2,000 each; 4,200 awards in total are planned until 1985-86.

At the "pre-Master's level", the Plan calls for an expansion of the current scholarships program to include postgraduate students who wish to combine research in an industrial firm with further study towards a Master's degree at a university. Under this scheme, an annual stipend of \$7,000 would be available for a maximum of two years. Between 200 and 1,100 Industrial Research Scholarships in each year, 1980-81 through 1986-87, are called for.

At the "post-Master's level" another expansion of the postgraduate scholarships program is proposed. Recent Master's degree recipients who are interested in an immediate R & D career in industry would be able to apply for an Industrial Research

Fellowship tenable in an industrial firm. Recipients would have to devote at least 90% of their time to industrial R & D. Recipients who want to continue studying for a Doctorate on a part-time basis would be required to spend 90% of actual working time in the firm on industrial R & D. These awards would be limited to a maximum term of three years and would carry a stipend of \$10,000 per annum. The NSERC Plan proposes that a total of 9,000 Industrial Research Fellowships be made available between 1980-81 and 1989-90.

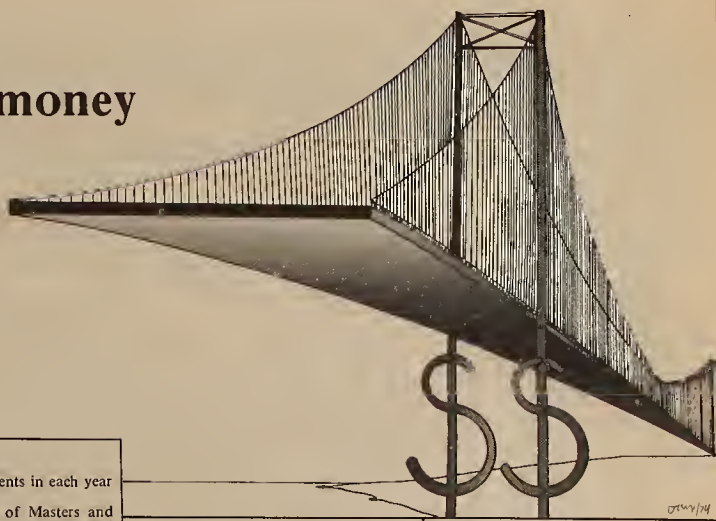
The equivalent awards within universities, the Postgraduate Scholarships and the Postgraduate Fellowships, would be the same as those in the present NSERC scholarship program, except for the differential in stipends. Sixteen-hundred scholarships and 800 fellowships are forecast for each year, 1980-81 to 1994-95.

At the postdoctoral level and beyond, three fellowship programs are envisaged. Two of these are directed at the university sector, the third at industry. Each is portable in the opposite direction. Within universities, the Postdoctoral Fellowship program would be continued, with awards made for up to two years duration. "A new and prestigious program" of University Research Associates patterned along the lines of the Medical Research Council's MRC Associates awards and at \$18,000 per annum is also envisaged. As well, an extension of the Industrial Postdoctoral Fellowship Program would create approximately 12,000 positions for Industrial Research Associates between 1980 to 1995. These awards would be tenable for industrial researchers at an annual stipend of \$18,000.

Finally, the NSERC Five-Year Plan proposes to implement two employment programs at the professional level. The first, Senior Industrial Fellowships, is already in place, but would be expanded to a total of 1380 awards at \$20,000 each between now and 1995. Research Professorships at \$35,000 per annum would be awarded "to a limited number of outstanding tenured university professors to enable them to devote full time to their university research endeavours." These awards could be for a period of up to 3 years. NSERC would also retain its E.W.R. Steacie Fellowship Program.

2. "Scientific Equipment Requirements."

The NSERC document points out that well-equipped university research laboratories, seen in the late 1960's, are a



Graphic—Tom McDonald

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John Kucharczyk is Executive Secretary for Scientific-Industrial Policy, Canadian Association of Physicists, and a physiologist at the University of Ottawa.

thing of the past: "The reduced funding levels from all sources have seen a dramatic erosion of the research tools which are available, and this has happened at the same time as university and industrial researchers need more and more to rely on state-of-the-art technology to remain competitive and effective."

Four principal elements are identified in the equipment challenge: (i) a "replacement" program for obsolete research equipment; (ii) a program to redress the inadequate equipment funding of the past (the "catch-up" element); (iii) a "growth" program which is tied directly to expanded or new research programs; and, (iv) a "technical support" element to ensure the proper operation and maintenance of purchased equipment. A total allocation of \$260 million for the five year equipment "refurbishment program" is suggested.

The Plan states that if the present level of NSERC equipment funding (\$9.2 million in 1979-80) were used entirely for replacement from 1979 to 1984 inclusive, this would cover only half of the NSERC-funded equipment inventory (\$93 million in 1979). It says further that replacement of the total pre-1977 NSERC (NRC) equipment inventory by the end of 1984-85 will require an additional \$38 million. Beginning in 1980, and continuing for each of the next four years, the Plan proposes that NSERC in-

crease its equipment maintenance and replacement allocation to \$16 million per annum. The total equipment program would also include a "catch-up" element of \$80 million and an "expansion" element of \$47.5 million, spread over the fiscal years 1980-81 to 1984-85.

In view of the diminishing ability of the universities to continue their current level of technical research support services, the Plan proposes that NSERC provide up to 50% of the estimated annual operating and maintenance cost of all new equipment and facility acquisitions. Approximately \$50 million would be allocated for this purpose over the next five years. An additional \$0.5 million per annum would be spent to develop a "special equipment management capability" within NSERC.

3. "An Expansion of Targeted Research."

The Five-Year Plan calls for a three-fold increase in the two NSERC programs which are specifically related to technology transfer from universities to industry and to research in identified "Areas of National Concern."

The Plan proposes that the budget for the Project Research Applicable in Industry (PRAI) program be increased from the 1979-80 level of \$0.6 million to \$2.0 million

in 1980-81, \$2.2 million in 1981-82, \$2.5 million in 1982-83, \$3.0 million in 1983-84, and \$3.5 million in 1984-85. It states, however, that "should the demand (for PRAI) increase more rapidly than now anticipated...then there would be a sharp increase in the funding requirements, and a separate submission for support would be required."

With respect to research in "Areas of National Concern", the NSERC document points out that the 1978 Strategic Grants competition produced over 300 applications of which 165 received funding. This year over 600 applications have been received by Council.

The Plan suggests that NSERC consider extending the existing designated areas for strategic grants (energy, toxicology, oceans, food/agriculture and communications) to one new area of research per year beginning in 1981-82, as well as considerably expanding the scope and funding of the Unsolicited Proposals Fund. The total grant budgets contemplated for the period 1980-81 through 1984-85 are \$98.0 million for support of strategic grants in already designated "Areas of National Concern", \$28.5 million for strategic grants in the three new areas, and \$13.3 million for unsolicited proposals.

4. "Maintaining the Foundation of Free Research."

The Plan points out that there has been a 30.7% real decline in NSERC (NRC) research funding since 1969-70, and that "... the view of the (NSERC) grant selection committees is that an average increase of about 64% in their budgets could be used effectively in the current fiscal year." Consequently, the Plan proposes that funding for its largest single activity, the Operating Grants program, be increased by: "(i) an annual increment to compensate for the previous year's rate of inflation plus a growth component equal to real GNP growth plus 1%, and (ii) incremental research funding of \$15,000 for each University Research Associate appointed through the proposed manpower program and \$50,000 for each Research Professorship." Such a financing scheme "would entail a minimum 35% real growth over the course of the next five years".

The document also states that the NSERC Council is firmly of the view that more interdisciplinary and team research is required within its programs. "To do this," the Plan proposes that "the Allocations Committee of Council will be asked to earmark a percentage of each Grant Selection Committee's funding for group endeavours."

NSERC is not seeking special funding for this new emphasis. In the Five-Year Plan, the current Team and Co-op program expenditures are added to the Individual Operating Grants and both are increased by applying the GNP plus 1% formula. The total budget requisitions for this component of NSERC's "Free Research" program are: \$78.6 million in 1980-81; \$85.1 million, 1981-82; \$91.7 million, 1982-83; \$97.9 million, 1983-84; and, \$104.4 million in 1984-85. These amounts do not include equipment and major equipment grants, or Core Grants. NSERC grants for travel, conferences, publications, general promotion and international exchanges would be increased slightly from the current level of \$1.3 million to \$1.7 million per year by 1984-85. The annual allocation for Regional Development Grants would increase from \$1.9 million in 1979-80 to \$2.5 million in 1984-85. NSERC financing of Negotiated Development Grants, Special Assistance to Forestry and the Program Contingency Fund would increase by a total of \$0.3 million per annum by 1984-85. Finally, the Plan proposes that NSERC should increase the General Research Grants (\$4.9 million in 1979-80) to \$9.4 million in 1984-85.

Implementation

In a separate section entitled, "Effective Management", the Plan states that administering targeted research is "much more demanding on (NSERC) staff time than are the programs of free research", and it cautions: "If new (NSERC) person years are not forthcoming (i.e. approved by the Treasury Board), then Council could not recommend any extension of targeted research or even the maintenance of the current level."

The Plan proposes that since NSERC, with a staff of 56 continuing employees and 5 casual positions, is "barely coping with the existing programs and funding levels...an essential element...is an approximate doubling of staff positions over the six year period". Operating costs by 1985 would, however, remain at the current level of approximately 2% of the total NSERC program.

Probably of greater interest to Canada's scientific community is that the Plan acknowledges that implementation of the programs proposed for NSERC requires extensive consultation with provincial and university authorities and with industry. In the case of the Strategic Grants Program the management process envisaged would be based largely on workshops, at which representatives from the three sectors would be asked for "appropriate input", especially "to see whether major targeted research projects of particular value to industry can be selected and then pursued by multidisciplinary teams of university researchers".

"Effective Management" in the other programs proposed for NSERC will, unfortunately, be a far more difficult undertaking, and this problem is not dealt with adequately in the Plan. For example, the major obstacle to implementing a progressive policy for recruiting new research personnel is that in Canada the demand side and the supply side of the manpower equation are controlled by different levels of government. The demand for scientists is in large part a function of Ottawa's policies on R & D, whereas the supply of new researchers (aside from immigration and emigration) lies under the jurisdiction of the provincial governments, through their financial responsibility for the universities.

This division of power and responsibility has, especially since 1977, allowed the entire question of scientific manpower to be handled as a political shell-game. Shortly after the previous Government of Canada announced its 1.5% G.E.R.D./G.N.P. target (June 1, 1978) it became clear that the universities, given current enrolment rates, could not supply the additional research personnel that would be required. The First Ministers, at their November, 1978, Conference on Industrial Research and Development agreed that federal-provincial co-operation and collaboration were necessary and would be forthcoming.

Yet this fall, at a meeting with representatives of the Ontario Federation of Students, the Minister of Colleges and Universities of Ontario skirted questions on scientific manpower training by speculating on how long it would take to reach the 1.5% or 2.5% policy goals—implying that there would always be sufficient time to meet any shortfall should it become acute. The response of the Ontario government is typical, and significant inasmuch as one-third of Canadian faculty members and one-half of the national population of graduate students are at universities in that province.

The Government of Canada became complicit in provincial underfunding of universities in 1976 when it renegotiated the Fiscal Arrangements Act in such a way as to allow the provincial governments to reduce their funding of post-secondary education without losing federal transfer payments. Under the new (1977) Established Programs Financing (E.P.F.) Agreement, the federal government provides limited cash transfers (over the first five years of the program)

CAUT AUCC FACULTY EXCHANGE PROGRAM

The AUCC and CAUT will continue the joint program of inter-university faculty exchanges during the 1980-81 and 1981-82 academic years. The program is designed to enhance the intellectual vitality of Canadian universities in a period of stable faculty numbers and to facilitate opportunities for faculty members to work in a different academic environment.

Conditions: Full salary and economic benefits will be paid by each participant's home university. In all ways, participants will be treated by the home university as if he or she were on full-time service. The exchange period will normally be for one academic year (September to April) plus a summer research period immediately before or after the academic teaching period.

Travel costs: Participating faculty members will receive basic travel expenses (against receipts) for themselves and their families from the host university. Arrangements for accommodation will be the responsibility of the participating faculty members.

Eligibility: For the present, the exchange program is open only to tenured faculty members.

Application: Tenured faculty members should make contact with and arrange the exchange with a colleague at another Canadian university. When a proposal has been formulated, the pair of faculty members are invited, with the approval and support of their respective department chairmen and deans where appropriate, to submit duplicate applications simultaneously to the Presidents of the universities concerned with copies to the Executive Secretary of CAUT and the Executive Director of AUCC. Applications should be made before March 31 of the calendar year in which the exchange will commence; applications should include details of the program proposed and information about the suggested exchange of responsibilities although it is not necessary that the participating faculty members be of equal rank.

Tenured faculty members who may be interested in participating in the program but who have not located a colleague with whom to exchange should write to the Executive Secretary of CAUT or to the Executive Director of AUCC who will assist in the pairing of individuals.

Association of Universities
and Colleges of Canada
151 Slater Street
Ottawa, Ontario
K1P 5N1

Canadian Association of
University Teachers
75 Albert Street
Ottawa, Ontario
K1P 5E7

The Social Sciences and Humanities Research Council (SSHRC) submitted in June, 1979, a document to the Federal government in support of their application for the financing of research and scholarship in the social sciences, humanities, and related professional disciplines for the period 1980 - 1985. Entitled *A Proposed Five-Year Plan for the Social Sciences and Humanities Research Council of Canada*, the document includes a description of the importance of research in the social sciences and humanities and the current status of such research in Canada, a summary of the present activities of the SSHRC, a statement of the objectives of SSHRC for the five year period 1980 - 1985, and an outline of three approaches together with financial budgets for achieving these objectives.

The Social Science Federation of Canada (SSFC) favourably views the development of a five year plan for the support of research in the social sciences and the humanities and will do all it can to support this new initiative. This analysis of the proposed five year plan described by SSHRC has been prepared in this spirit.

Importance of research in the social sciences and the humanities (Section C.1.)

The SSFC reaffirms its belief in and support of SSHRC's general mandate to promote and assist research in the social sciences and the humanities in Canada. We concur that it is neither desirable nor feasible for Canadians to rely mainly on the results of research conducted in other countries and that Canadians must contribute to universal scholarship. It is axiomatic that without such research Canada will find itself relative to other countries of the world, in a weak position, dependent upon others not only for knowledge but also for research manpower. This is an intolerable position for anyone who has seriously considered the role and place of social science and humanities research in a young, advancing, and prospering nation.

The ways in which the human sciences differ from the natural sciences are appropriately stressed. Of particular importance is the observation that external generalizability in the human sciences is frequently much lower than that in other sciences. Snow (1977), for example, commented:

As work on aptitude-treatment interactions (ATI) has proceeded, it has become clear that interactions, both among individual difference variables and between them and instructional conditions, can be so complex as to push generalizations beyond our group, practically speaking (p. 12).

The SSHRC implicitly defines two sources of topics for research, one related to "curiosity" and the other to solution of social and economic problems. While we concur generally with this distinction, its presentation and analysis is hardly appropriate. The manner in which this discussion is presented is biased in favour of the latter and raises doubts about the utility of the former. The use of fallacious phrases like "simple", "sheer", "giving intellectual pleasures" may lead to questions about the motivations of social scientists engaged in curiosity-oriented research. Although perhaps not immediately relevant, such research may in the long run make a substantial contribution to the advancement of knowledge, a point we believe the SSHRC accepts. In fact many studies have pointed out that in the social sciences all research is, in the final analysis, "problem" oriented. The differences are a matter of point of perspective and departure. What has become known as "mission oriented" research deals with current policy problems of governments and other social organizations. "Basic" research goes behind current issues to raise questions of structure, objectives and fundamental relationships usually in a longer-term perspective. It is important for SSHRC to continue to give first priority to basic research even when it is developing programmes of concerted research.

A cautionary note is in order here. At this

Analysis of the proposed five-year plan for the SSHRC

point in the SSHRC report, research directed toward "issues requiring urgent and informed decisions in Canada" has been stressed. This, of course, is the purpose to which the strategic grant program is directed. Our Committee will be commenting in detail on the introduction of the strategic grants program. In the meantime, as stated by SSHRC, it must be recognized and maintained that this program is in addition to the already existing independent research program. Given the present situation of an increasing money supply for topics related to current and national concerns, SSHRC must continue to consciously acknowledge and support the existence of the independent research program, thereby maintaining an overall balanced perspective toward research.

should have reported their analysis of the causes of the specific problems identified more thoroughly so as to better foreshadow the activities and funding priorities proposed for the 1980-85 period. The problem of gaps in self-knowledge provide one such example. There is no doubt that such deficiencies exist, but what are they? Is there a relationship between existing gaps and the strategic grants program? If so, given the sparse discussion of the problem of gaps in self-knowledge, questions could be asked about whether the allocation of financial resources to the thematic program proposed by SSHRC is justified.

Insufficient data are provided to assess the severity of the problem of the aging professoriate. Estimates or projections of the age profile of social scientists and humanists in Canada to the year 1990 or so

the disciplinary disparities described under problem (vi)? Given the sparse treatment, the question again arises as to what part of the proposed activities and funding will be directed toward seeking a solution to these problems.

A similar state exists in the section on a potential decrease in provincial support. What needs to be stated in this section — and not parenthetically — is that Canada's capability for first-rate scientific work and scholarship has always been a function of the quality and quantity of its university professors. During the period of so-called "rapid-expansion" of Canadian universities in the 1960's, the methods used by the federal granting councils made it possible to develop a reasonable level of research capability in spite of the provincial preoccupation with teaching. New graduates were continually added to the stocks of researchers to take the place of those failing to survive the process of constant judgement and rejection characteristic of the peer review system. In that time of relative prosperity, the *de facto* sharing of responsibility for the two essential features of university scholarship was relatively successful.

The current challenge for SSHRC is to develop mechanisms for enhancing the quality of teaching and research and maximizing the intake of new faculty, even under conditions where provincial support appears to be pegged exclusively to levels of student enrolment. If the universities are allowed to submit to the impending demographic challenge by completely restraining their growth, the calibre of university research will undoubtedly suffer — because universities will be deprived of the services of many highly-qualified young scholars and also because current funding levels do not permit adequate maintenance of the existing effort.

Provincial government planners are fond of telling us that in 15 years or so demand for university staff will again begin to increase, probably substantially. Yet as a recent Science Council report points out, it may well be wishful thinking to expect that any sudden demand for researchers would be met by a system which for over 15 years would have offered no incentive to young graduates to embark on a career of university scholarship.

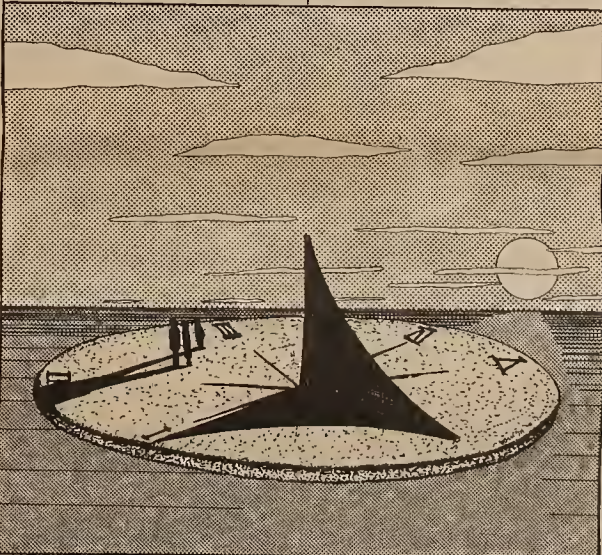
We find the lack of any explicit reference to the age-old wisdom that "you cannot turn research (and researchers) on-and-off like a tap of water" to be a glaring omission of the proposed five year plan. Mechanisms must be developed to make it possible for the universities to spread the acquisition of new faculty over several years, beginning well before the 1990's.

Regional and university disparity in a large, relatively sparsely populated country presents a unique challenge. Really a problem of optimizing manpower and resource utilization, this issue is not documented well and does not adequately reflect the concern and feelings of faculty of relatively isolated and/or small universities.

The lack of time for research is also a pressing problem inhibiting the progress of research in the social sciences and humanities. The SSFC believes that inclusion of lack of time as a specific problem would have foreshadowed in a positive manner two of the important new activities proposed for implementation during 1980-85.

One would have hoped that SSHRC would have presented their findings using a variety of formats appropriate for their audiences. Politicians, for example, often respond better to pictures than to written words. Graphs often make points clearer, and can be used to dramatize effectively and realistically the point to be made.

Patterns of funding. Again, SSHRC should have more forcefully described the funding pattern in the social sciences and humanities. Direct comparisons with the natural and medical sciences should have been provided, thereby highlighting the differences in funding among these three areas.



Graphic—Tom MacDonald

The Five-Year Plan's Description of the Current Situation of Canadian Research (Section C.2)

Specific Problems. The SSHRC identified 10 problems which, if not solved, will result in both a smaller number of Canadian research studies and a reduced Canadian research force. Their reported analysis, though, is quite brief given the apparent severity of these problems. Perhaps self-evident to those who prepared the report, SSHRC officials should realize that the same is likely not true of those who will read and subsequently judge the worthiness of their request for continued and increased funding.

As this section is perhaps the second most important part of their study, the SSHRC

would, unless fundamentally different from other research areas, reinforce the message that the "aging professoriate" is an enormous problem. If not attended to now, history may repeat itself, for we will again have a situation not unlike the 1960's when a large number of scholars from outside of Canada had to be hired to staff Canadian vacancies. Also, if the Federal government is to reach its goal of research representing 2.5% of the GNP in 1984 it will require additional research manpower.

Likewise the discussion of untapped research capacity is vague and consequently inconclusive. Who are the members of the substantial group of researchers for whom present program regulations are too restrictive and what is the type of funding that the Council cannot provide with its limited resources? Is this issue somehow related to

The Place of the SSHRC in Canadian Research in the Social Sciences and the Humanities (Section C.3).

The description of the present pattern of SSHRC spending and the outline of existing programs is generally presented at the appropriate level of detail. The use of figures and graphs would have enhanced the presentation. Given the nature of human research, it would have been better to have presented the rate of participation data in reverse order, thereby highlighting the fact that over the last decade approximately half the full-time professors at Canadian Universities applied to SSHRC at one time or another for research support. It appears that yearly participation data for the general research program, an acknowledged vital activity of SSHRC, are not available. Clearly, these data would serve to demonstrably and accurately enhance SSHRC participation in social sciences and humanities research.

Priorities for the Eighties (Section C.4)

The SSFC notes that a positive attempt has been made to address the majority of problem areas briefly described in the earlier parts of the SSHRC document. As stated earlier, the reason for each proposed activity would have been more clear and forceful had the problem areas been more thoroughly analyzed. This absence may lead some to conclude that the program priorities proposed have little to do with the rest of the report and hardly follow from it. For example, the stress placed upon theme (strategic) research in the earlier parts of the report and the proposed allocations of funding may serve to elevate research relating to themes of national importance from second to first priority in the minds of many who will read the SSHRC report.

Objectives. Little change is noted between the overall objective and four sub-objectives proposed for 1980-85 and the objectives and the sub-objectives either stated earlier in the report (see pp. 1-2) or implicit in the current activities of SSHRC. This is attributable mostly to the general nature of these objectives. More significant are the proposed activities designed to meet these objectives.

The SSHRC proposes to continue its use of peer assessment; we concur with this recommendation.

Major program thrusts for 1980-85. 1. First priority. Support of research initiated by individual scholars must remain the key element in SSHRC's programming. The support of the independent research program is essential to ensure equitable support for the research activities of scholars from a wide range of disciplines, with great diversity in areas of specialization, and from different size universities in different regions of the country.

We note with optimism that the SSHRC is actively considering plans to increase the availability of research time for independent research. It is discriminatory that such assistance will only be available as part of the thematic research program. We strongly encourage the SSHRC to quickly implement the "time assistance" proposals in its independent research programmes.

The SSHRC recommends that activities related to overcoming problems associated with regional disparity and differential university size be elevated to a first priority. To this end we suggest that program (iv) fourth priority be integrated with program (1), first priority, and that the problems of small universities be specifically addressed.

2. Second Priority. The SSHRC proposes to expand markedly its support of research related to themes of national importance. Designed to complement independent research, thematic research is geared to topics and issues likely to prove important to both decision-makers and to the public. The SSFC urges that such research on problems of special interest to Canada not become decision-oriented research. Rather, we see as the product of this research knowledge and processes which lead to policy recommendations.

The SSHRC does not propose to direct the theme research, nor to interfere with the

independence characteristic of currently funded projects. On the other hand, the proposed SSHRC evaluation of the theme program with its product orientation raises questions about maintaining independence. The SSHRC must continue to insist on proper conceptualization of problems, on rigorous research designs, on appropriate methodology, and on the understanding of root causes rather than symptoms. Applications solicited under this program must be adjudicated following the procedures used with the other programs so as to ensure continued high quality research. As noted above, our Committee will be commenting later at length on the appropriateness of a Strategic Grants Policy and proper mechanisms for the administration of such a policy. The SSFC further notes that the practices it has consistently proposed for promoting independent research are now to be made available for thematic research only and not independent research. This is a true reversal of priorities.

3. Third priority. The SSHRC proposes to take a more active role in the dissemination of research results, acting as a catalyst to get others involved in this endeavor. The SSFC believes the learned societies should play the most active role in communicating results. But it must be recognized that these societies either have no staff or only a small, part-time staff, unlike corresponding professional associations in other countries. The proposed plan appears to ignore this situation. Indeed, virtually no attention is directed toward the learned societies, yet they constitute a pillar of the national research infrastructure.

4. Fourth Priority. The SSFC agrees that the areas associated with research capacity have been sadly neglected and endorses the activities proposed to rectify this situation. As indicated earlier, we recommend the elevation of program (iv) to the first priority, and suggest that firm steps be taken to ensure completion of the proposed evaluation work associated with the future need for university scholars.

To summarize, the SSFC supports in principle the initiatives proposed by the SSHRC for meeting its objectives for the five year period 1980-85. We generally agree with the program priorities as presented, and hope that the distance between the first and fourth is such that all priority areas will be meaningfully attended to. Increased time for research, post-doctoral fellowships, increased funding for smaller isolated universities, faculty exchanges, research centres, library acquisition programs and thematic programs are new activities which we feel will help to optimize and increase Canada's research capacity. The international programs will permit continued and increased participation in the larger international sphere, thereby enhancing Canadian research.

But, as suggested earlier, we are concerned about the role and function of the thematic research program. This disquiet is fed by the SSHRC when they state:

... the Council wishes to preserve and expand its fruitful support for independent research. The major area for growth in percentage terms, however, will be in concerted support for research on issues of national significance (SSHRC, 1979, p. 34).

Greater emphasis on research in areas of national concern may well be a strong selling point, especially with politicians. The dangers inherent in this strategy are, however, enormous. These programs, once implemented to the magnitude envisaged may, if not checked, slowly encroach on other program components. It should be made clear that funds will not be diverted from other programs to maintain or expand the strategic grants program.

Further, care must be taken to avoid the setting of false expectations for theme research. Human behavior is a complex phenomenon, depending upon time and place. Easy, quick, clear results may not be available.

Evaluation plans. The SSFC supports the implementation of scheduled systematic

evaluations of the SSHRC programs. The package as presented should lead to data and information which will be useful in the development of the second five-year plan (1985-90), particularly if the effectiveness evaluations and operational audits are conducted concurrently. If, as proposed, they are conducted separately, only "half" of the story will be available. Lastly, we recommend that the entire evaluation package be kept intact and its results publicized in the Council's Annual Report.

Budget Alternatives (Section D)

The SSFC strongly recommends elimination of Alternative One as a viable funding procedure. An annual funding increase equivalent only to the anticipated growth in the Gross National Product (GNP) will lead to a further decrease in the amount of money, in real terms, available to the SSHRC. GNP increases forecast by the C.D. Howe Institute, the Conference Board in Canada and the O.E.C.D. range from one to two percent for 1980-81, and are less than four percent for the next four years which may be optimistic. The decrease is further predicted by the acknowledged negative discrepancy between the Consumer Price Index (CPI) used as the deflator in calculating SSHRC's budget projections and the Implicit Price Index of Government Expenditures on Goods and Services (IPI-GEGS). SSHRC's preferred indicator. Indeed we wonder why the CPI index was not adjusted somehow to account for the higher rate of increase in the IPI -GEGS index (perhaps by developing some sort of mathematical function over the last x years for which both indices are available). The SSHRC must continuously examine the use of the IPI-GEGS on a year to year basis and relate it to other indicators of fiscal growth and inflation so as to avoid the problems associated with under-estimation.

Alternative two offers the only redress to the decrease in real funding (approximately 28 percent) experienced since 1970-71, and is the only alternative that will permit balanced growth of the SSHRC's proposed programs in line with the priority ratings. Clearly the most attractive of the three alternatives presented, its adoption would permit an exciting breakthrough. All of the problems earlier identified in the report would be realistically and positively addressed, enabling the steady progress of social science and humanities research. The SSHRC has not recommended this alternative to the government. The first reason, related to economic considerations, may now be debatable in light of the present Government's view of, and belief in, research. The second reason serves to undermine SSHRC's capability to

administer a program which they a) know to be necessary for Canadian social science and humanities research to reach its potential, and b) advocate for the longer term.

Alternative Three, a "middle course", is designed to meet the most pressing demands within a time of fiscal constraint. Although middle in the amount of funds requested, it appears not to maintain the balance of activities implied by the description of proposed programs and allowed for under the second alternative budget. In this funding alternative thematic research is budgeted so that its share of the total SSHRC funds increases from 3.8 to 19.6 percent. In constant (1979-80) dollars, the SSHRC recommends an increase in thematic grant support from 1.2 million dollars in 1979-80 to 9.46 million dollars in 1984-85, an increase of 688 percent. In comparison, the constant dollar expenditures for independent research (including research grants, leave fellowships, negotiated grants, general research grants, post-doctoral fellowships) would increase by only 24 percent (from 17.1 to 21.3 million dollars). Taking into account the 28 percent real value decrease in the amount of money available for independent research since 1970, this modest increase of real dollars allotted to independent research is insufficient to regain that which has been lost. If the GNP is less than currently prophesied, the funding forecast will in fact be negative in the sense it will not even keep up with inflation. The SSFC encourages the SSHRC to more positively treat independent research under alternative three by redistributing their budget amounts. To do otherwise will lead to a shift in priorities with a commensurate shift in the nature of social science and humanities research (as more and more researchers, enticed by the "features" and increasing availability of thematic money, move from their own research to the "called for" research). As stated by the SSHRC, "this would in turn undermine the thematic program, since to succeed it must build on the foundation offered by our existing programs (SSHRC, 1979, p. 42).

The SSFC hopes the Government will see fit to support Alternative Two, appropriately modified to more accurately reflect the SSHRC's program priorities if it really wishes to give a "major boost to university research".

References
Social Sciences and Humanities Research Council of Canada. *A proposed five-year plan for the Social Sciences and Humanities Research Council of Canada*. Ottawa: SSHRC, June, 1979.
Snow, R. E. Individual differences and instructional theory. *Educational Researcher*, 1977, 10, 11-15.

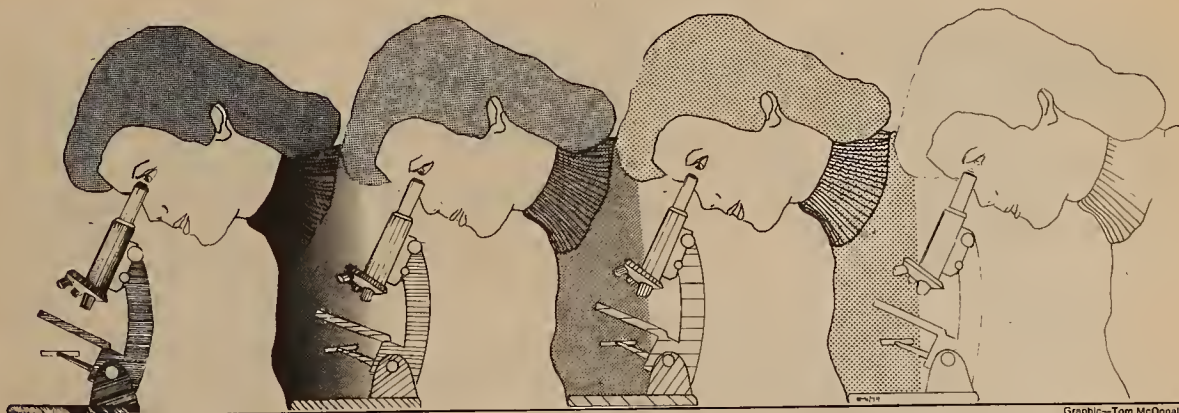


Saint Mary's University Dean of Science

Applications are invited for the position of Dean of the Faculty of Science, which becomes vacant June 30, 1980. The Faculty offers honours and major programs in Biology, Chemistry, Geology, Mathematics, Physics, and Psychology; a diploma program in Engineering; and master's programs in Astronomy and Applied Psychology. It is committed to carrying on quality research in a predominantly undergraduate institution. The appointee will be expected to provide dynamic leadership in this area as well as in the normal academic programs.

Candidates should have a strong background in administration, teaching and research, and be qualified for senior academic rank. Written applications, with a resume and the names of three referees, should be sent to:

Dr. W. A. Stewart
Academic Vice-President
Saint Mary's University
Halifax, Nova Scotia B3H 3C3



Graphic—Tom McDonald

The emerging crisis in Canadian scientific manpower — more than a question of “supply and demand”?

by John Kucharczyk

According to a recent Ontario government analysis of the Statistics Canada Survey of 1976 Doctoral Degree Recipients from Canadian Universities, the common assumption that “a Ph.D. is a ticket to unemployment because of overspecialization, excessive salary demands and inflexibility of the degree holders” is quite untrue. Only 2.8 per cent of doctoral recipients wanting to work two years after graduation could not find jobs.

The report states, however, that the Ph.D.s as a group were not succeeding to the extent they would like to. They were apprehensive about future employment prospects.

In particular, “there was a surplus of Ph.D.s looking for university teaching positions.” Eighteen per cent of the 1976 doctoral recipients surveyed by Statistics Canada either were still looking or had given up looking for a university faculty job because “positions were too scarce.” According to the Ontario Ministry of Colleges and Universities, this “surplus” will likely expand because of the predicted decline in university enrolment and the compressed age profile of the current professoriate. “Students who are considering entering Ph.D. programs in the next decade need to be cautious in their expectations about obtaining a faculty position,” warns the Ministry in its report.

The second largest employer of Ph.D.s was government. Seventeen per cent of the 1976 graduates ended up working in one of the three levels of government; almost one-half were employed in the federal sector.

Sixty-eight per cent of the Ph.D.s who obtained jobs in government had degrees in the pure or applied sciences, engineering or

the health sciences. Of the remaining 32 per cent with degrees in education, the humanities or the social sciences, 10 per cent were economists. Although “governments also face a period of staff constraint,” says the Ontario ministry report, “it seems reasonable to assume that governments will continue to employ a significant proportion of Ph.D.s but will not fill the Ph.D. employment gap left by declining need for (university) faculty.”

Eleven per cent of the 1976 Ph.D. graduates gained employment in the private sector. Eighty-two per cent of these had degrees in the pure or applied sciences or engineering, but only one in two were actually employed in research positions in industry.

The message for aspiring Canadian scientists? Writes the Ontario Ministry of Colleges and Universities: “Since industry employs only six per cent of all Ph.D.s...the impending decline in faculty appointments may affect Canada’s research potential because young scientists with new ideas may not have access to the resources they need. Industry may want to increase the number of Ph.D.s in the next decade to offset this, but for small companies the overhead required to do advanced research may be prohibitive. Large companies are often multinationals with research facilities abroad.”

Coping with the demographic challenge to university research.

The position of the Government of Ontario on hiring of new faculty for its universities is not a solitary one. Historically, provincial funding of universities in Canada has been pegged to levels of student enrolment. If enrolments decline throughout the next decade, as is widely predicted, there is certain to be a further reduction in provincial support and consequently in the ability of the universities to hire new staff.

The consequences for research could be enormous. During the period of rapid expansion in the 1960’s, the age structure that

developed in universities was in the form of a broadly-based pyramid, with very few older professors at the top and increasingly larger numbers of new faculty at the bottom. Natural attrition of existing staff will therefore be small for the next 10-15 years and universities will be deprived of the services of many talented and energetic young Canadians. Compounding the basic problem of an “aging professoriate” is that most of the “old” researchers, who will increasingly make up the majority of the scientific workforce, have already endured nearly a decade of systematic erosion of the Canadian science dollar.

To make the situation even more complex, it is expected that in about 15 years time demand for university faculty will again begin to increase as those staff members who are now 50 years old or less reach retirement age, and as the number of young people in the 18-24 age bracket begins to grow. Yet, as the Science Council recently stated, “it would be wishful thinking to expect that this demand could be met by a Canadian university system, which for 15 years, would have offered no incentive to young graduates to embark on a career of university teaching and research.”

To avoid having to import large numbers of scholars from foreign countries in the 1990’s the Science Council has recommended that provincial governments should allow their universities to spread the acquisition of new faculty over several years, beginning well before 1993. This could be accomplished in part by establishing university research chairs in disciplines that are particularly relevant to provincial responsibilities and priorities.

Optimizing manpower and research resource utilization.

According to the Science Council, Canada’s universities have a number of means at their disposal for maintaining the quality of teaching and research and maximizing the intake of new faculty, even under conditions where provincial support

would continue to be governed by levels of student enrolment.

- Inter-university transfers of staff and facilities (“courses and programs which require specialized staff and expensive equipment or library holdings but which attract relatively small numbers of students”) should be undertaken whenever research and/or teaching in an area falls below the “critical mass” for productive scholarship in a particular university. Universities in the same or adjacent cities could jointly develop graduate programs in appropriate disciplines, for example, along the lines established by the Guelph-Waterloo Centre for Graduate Work in Chemistry.

- The lack of “portability” of university pensions is a major obstacle to intra- and inter-sectoral transfer of university researchers, according to the Science Council, and this militates against bringing about the kind of concentration of scientific expertise necessary to create “Centres of Excellence” or even simply to preserve an area of scholarship. The Science Council recommends the implementation of a common pension policy for all universities within a given province and suggests that the federal government should be prepared to act as an intermediary and, if necessary, a banker to bring this about. The federal government should also be willing to play the same role in achieving portability of pensions between the university and private sector, according to the Science Council, and in doing so would be taking a positive step to optimize manpower utilization for national benefit.

New Challenges for NSERC and MRC.

The major challenge for these two federal granting councils is to develop methods for preserving and enhancing the quality of research which do not rely on the teaching requirements of the universities to supply competent new investigators. The Science Council suggests, for example, that NSERC launch a program similar to the MRC scholarships, not only to alleviate the shortage of young research talent, but also to

John Kucharczyk is Executive Secretary for Scientific-Industrial Policy, Canadian Association of Physicists, and a physiologist at the University of Ottawa.

strengthen specific areas of research within a department or university and restore a more stable age distribution in the scientific community. NSERC should set an initial target for the program of 110 awards, for which the cost would be \$2 million in salaries per annum, or 3% of NSERC's current budget.

The Council also has recommended that NSERC increase its Senior Industrial Fellowships program by a factor of ten, and attempt to at least double the present size of its Industrial Postdoctoral Fellowships program through a campaign to expand the number and kinds of participating companies.

Estimates of future research manpower requirements

It is important to recognize that the limited employment opportunities forecast for Ph.D.s by the provinces presuppose the maintenance of a "steady state" for Canadian science and technology — that aggregate R&D spending will remain below 1% of G.N.P., that research done by private industry in Canada will remain at approximately 43% of the national total, and that the demand for university teaching personnel will remain low until the 1990's because of declining student enrolments.

If, on the other hand, Canada's investment in R&D moves upwards, towards the 2.5% Gross Expenditures on R&D (G.E.R.D.)/Gross National Expenditure (G.N.E.) goal proposed by the Progressive Conservative Party prior to the last federal election, an altogether different research manpower picture emerges.

Table 1 indicates the anticipated direction and expansion of G.E.R.D. under the more modest 1.5% G.N.E. target announced by the previous Liberal government on June 1, 1978. In this target distribution of R&D spending, the % of G.E.R.D. performed by industry would increase from 43% in 1978 to 65% in 1983; federal intramural G.E.R.D. would fall from 28% to 15%; university G.E.R.D. would increase from 2.5% to 16%; and, provincial governments' and agencies' share of G.E.R.D. is presumed to remain at 3%. "Autonomous" increases (viz., those due to existing trends and incentives for industry) are considered to amount to \$505 million. To raise G.E.R.D. to 1.5% of G.N.E. by 1983, therefore, would require an increase of an additional \$1,721 million, most of which (according to the Ministry of State for Science and Technology), would be accounted for by industry.

Table 2 summarizes the sources of R&D manpower requirements arising from normal growth ("autonomous requirements") and from additional increases attributable to the 1.5% target. The requirements for researchers were computed by dividing the value of R&D performed in each sector by the productivity-adjusted average cost per researcher, to produce a series of stock of R&D personnel, 1978-83, for the normal growth case and the target case. "Attrition" (replacement requirement) was calculated at 1.5% of the stock in each year, a rate of replacement derived from reviews of science and technology occupations listed in a central, computerized data bank. MOSST assumes also that the quantity of R&D generated per researcher increases by an average of 3% per year (this is consistent with annual productivity increase estimates for G.N.P.).

As shown in Table 2, some 3,100 researchers would be required to meet normal growth needs whereas target-related growth requires an additional 16,400 research-trained personnel, for a total 19,500. Approximately 1,900 of this total would represent replacement requirements due to death, retirement and emigration.

Will Canadian universities be able to meet the manpower requirements implied by the data in Table 2? According to MOSST's calculations, if the current level of degree-outputs persists for the next five

Table 1

INCREASES IN GERD TO 1983 (MILLIONS OF CONSTANT 1978 DOLLARS)

PERFORMER	1978 GERD	1978-83 INCREASES		1983 GERD
		AUTONOMOUS (1)	ADDITIONAL (2)	
FEDERAL GOVERNMENT	606.9	5.0	58.1	670.0
PROVINCIAL GOVERNMENT	73.7	24.5	32.8	131.0
INDUSTRY	927.5	355.0	1,580.5	2,863.0
UNIVERSITY	555.2	111.8	46.0	713.0
PRIVATE	14.7	8.7	3.6	27.0
NON-PROFIT	2,178.0	505.0	1,721.0	4,404.0
TOTAL				

SOURCE: ESTIMATED BY MOSST (unofficial)

(1) This is the growth in GERD that is expected on the basis of current trends and measures, without additional R&D effort.

(2) This is the additional R&D effort applied to raise GERD to 1.5% of GNE from the level it would reach autonomously.

(3) This is the sum of (1) and (2).

Table 2

INCREASES IN GERD MANPOWER, 1978-83

PERFORMER	1978 STOCK	1978-83 INCREASES		1983 STOCK	NEW REQUIREMENTS
		AUTONOMOUS (1)	ADDITIONAL (2)		
FEDERAL GOVERNMENT	5,980	-354	534	5,726	180
PROVINCIAL GOVERNMENT	717	164	297	1,116	461
INDUSTRY	9,578	2,625	15,174	25,306	17,799
UNIVERSITY	4,990	562	383	5,549	945
PRIVATE	143	66	32	228	98
NON-PROFIT	21,504	5,033	16,425	31,962	19,463
TOTAL					

SOURCE: ESTIMATED BY MOSST (unofficial)

(1) Includes 1655 man-years due to attrition.

(2) Includes 244 man-years due to attrition.

(3) This is the sum of the autonomous and additional increases in stocks plus the combined requirements for replacements due to death, retirement, emigration and other factors.

Table 3

TOTAL SUPPLY OF RESEARCH-TRAINED MANPOWER, 1979-83 (GRADUATE DEGREES IN NATURAL SCIENCES AND ENGINEERING)

	5-YEAR TOTAL 1979-83
HEALTH SCIENCES	2,600
ENGINEERING	5,700
LIFE SCIENCES	4,350
PHYSICAL SCIENCES AND MATHEMATICS	5,750
TOTAL SUPPLY	18,400

SOURCE: ESTIMATED BY MOSST (unofficial)

Table 4

R&D MANPOWER: TOTAL REQUIREMENTS AND SUPPLY, 1979-83 (NATURAL SCIENCES AND ENGINEERING)

	FIELD OF STUDY		
	APPLIED SCIENCES	ALL OTHER	TOTAL
AUTONOMOUS GERD GROWTH			
ADDITIONAL GERD GROWTH:	2,300	800	3,100
- FEDERAL	250	250	500
- PROVINCIAL	150	150	300
- INDUSTRY	11,400	3,800	15,200
- UNIVERSITIES	200	200	400
- PRIVATE NON-PROFIT	25	25	50
NON-GERD GROWTH	5,900	2,200	8,100
TOTAL REQUIREMENTS	20,225	7,425	27,650
TOTAL PROJECTED SUPPLY	11,800	6,600	18,400
DEFICIT (-) OR SURPLUS	-8,425	-825	-9,250

SOURCE: ESTIMATED BY MOSST (unofficial)

years, the following supply picture emerges (Table 3).

MOSST points out that these numbers are only approximations, and the actual outcomes could be lower if current declines in graduate enrolments were to accelerate. Otherwise, the HQM model projects there will be approximately 18,000 additional masters and doctorate level researchers available by 1983.

MOSST suggests further that the requirements for 19,500 additional researchers for "autonomous" and target-related G.E.R.D. growth will not be the only sources of demand. Non-G.E.R.D. demand for natural sciences masters and doctorates will, according to the HQM model, be in the area of 8,100 over the period of 1978-83. Total requirements for research-trained personnel would therefore be 27,600 substantially in excess of projected supply.

To match the demand and supply estimates it is necessary to examine the likely field-of-study composition of the projected new requirements for manpower. For this purpose, data on both sides was classified by MOSST into two groups: applied scientists, and non-applied scientists. For the purposes of this comparison the "applied" sciences included health sciences, engineering, agricultural sciences, forestry, earth sciences, computer science, metallurgy and materials science. "Non-applied" sciences included biochemistry, chemistry, physics, biology, botany, zoology and mathematics. A further disaggregation was not possible, according to MOSST.

Table 4 summarizes the demand-supply comparisons for the years 1979-1983. MOSST assumed that three-quarters of additional industrial requirements for manpower will be in the applied sciences and one-quarter in the non-applied fields. Supply data were by field of study.

Total projected demand for post-graduates in the applied sciences is 20,200, whereas estimated supply is 11,800. This implies a shortfall of some 8,400 researchers. The requirements in the non-applied sciences from all sources is estimated at 7,400 by 1983. Compared with an expected supply of 6,600, this yields a shortfall of 800 researchers. It appears, therefore, that while the exact number cannot be determined, any major expansion of Canadian R&D could be severely compromised by a shortfall of research-trained personnel.

Recruitment of research personnel

As a recent report of the Biological Council of Canada⁴ points out, research manpower training is an area in which the universities are and will remain pre-eminent because they, better than other public or private institutions, can provide that unique blend of higher education and research experience that leads to the best all-round preparation for scientific work. It is also very clear that our governments believe the large majority of employment opportunities for university graduates will in future be found only in the private sector.

Therein lies a major problem. Industry's current share of G.E.R.D. is about one-third and its performance share is just over 40%. Realization of the 1.5% G.E.R.D./G.N.E. goal by 1983, on the other hand, requires spending increases for industrial R&D of more than 30% per annum for each of the next four years. This will never be accomplished unless Ottawa and the provinces can agree that both levels of government, together with industry and the universities, must share the responsibility for stimulating the growth of science and technology in this country.

Canada's scientific manpower predicament is more than simply a case of declining student enrolments reducing the demand for university faculty. Boundary spanning the historically separate jurisdictions in post-secondary education and support for research must be viewed as the first priority

In availing myself of the invitation of the Hon. Camille Laurin, ministre d'Etat au développement culturel, to comment on the Green Paper entitled *Pour une politique québécoise de la recherche scientifique*, I wish to emphasize that the ensuing remarks neither are nor pretend to be an exhaustive critique of the Québec government's position paper on research. My comments are, rather, a series of reflections elicited by the Green Paper, challenging some of its fundamental assumptions and offered in the hope that they may influence the government's eventual action in the domain of science policy, for the greater good of the public at large and of the scientific community.

My first criticism of the Green Paper is that it fails to put forward a workable, yet comprehensive, definition of "research" (*recherche*). This is no mere semantic quibble; as anyone professionally involved in an investigative discipline can attest, the term "research" is one of the most over-used and misused in contemporary parlance. Apart from its legitimate and indisputable applications in such cognitive fields as the natural sciences and humane scholarship, it has been indiscriminately applied to everything from opinion polls to public works feasibility studies, from statistical surveys of tobacco consumption to mundane technological improvement and innovation (the proverbial "better mousetrap" of the "successful" inventor). No matter how trivial or pedestrian a project may be, the term "research" is sooner or later applied to it, invariably with the result of giving it instant respectability. Our contemporary over-use of the term has led us into the most appalling absurdities: it is not unheard of today to have elementary school teachers maintain that their pupils "are doing research" when they consult a dictionary or encyclopedia in writing an essay.

Research a cognitive exercise

Least I should be accused of favouring an elitist concept of research (a damning accusation indeed in an age addicted to participatory democracy, or its illusion), let me be more specific. My motives for excluding certain pursuits or activities from the proper sphere of the term "research" are not rooted in any irrational prejudice against populism; they are, on the contrary, founded on the belief that research is primarily and *primordially* a cognitive exercise, that is, one essentially dedicated to the advancement of human knowledge for its own sake. This deceptively simple definition involves two subordinate aspects: first, the activity must contemplate no end other than the attainment of new insight, knowledge or understanding for its own sake; and, second, the insight, knowledge or understanding that it achieves (if successful) must represent an addition to, or a refinement upon, the best and most complete knowledge that humanity now possesses. The first desideratum immediately excludes so-called "applied research", whether in the form of demographic studies to predict the school population ten years hence or in the form of projects to determine the most efficient way of rustproofing metal, decontaminating drinking water or reducing fuel consumption. I do not for a minute dispute the great practical value and utility of such investigations nor the possibility that they may, in some cases, *incidentally* contribute to the advancement of general human knowledge and understanding; I merely question whether they require the support or incentive of government subsidies or are likely to benefit from any form of public intervention. Investigators engaged in "applied research", after all, invariably do so from a more or less immediate expectation of private advantage: in finding solutions to problems, they have their reward. This applies equally to industrial research and development and to the vast majority of government studies. By contrast, the pursuit of "pure research" is, by definition, always

An open letter to the Quebec government

The Green Paper for a Quebec science policy

by Thomas A. Reisner

In March 1979, the Minister of State for Cultural Development in Quebec, Camille Laurin, issued the Green Paper for a Quebec Science Policy.

The 222-page document, meant to serve as a basis for public discussion leading to the eventual creation of government policy in the area, suggests that a department of state for research and technology might eventually be set up. It proposes the creation of a government body to co-ordinate research efforts by government, industry and the universities and an interdepartmental committee to co-ordinate government research. It also proposes that the new research and technology minister be advised by a consultative committee of non-government people.

Since the time the Green Paper was issued, many universities, groups and individuals representing the academic and scientific community in Quebec, including FAPUQ, have responded to the

recommendations contained in the government document.

The following is an open letter to the Quebec government from Thomas A. Reisner, Professor of English at Laval University. In an introduction to his letter, Professor Reisner asserts that the Green Paper "represents the last in a continuing series of measures by the Quebec government to exert thought control over the Quebec population. More subtle than the Charter of the French language and less broad in its scope than Mr. Laurin's paper on Cultural Development, the Green Paper, however, is none the less dangerous, for it seeks to bring even academic inquiry within the purview of government regulation."

Professor Reisner's letter expands on this view, and in so doing, offers some thought-provoking observations on the Green Paper in particular and the role of research in

evaluation poses problems of its own, that in a populist society the judgment of experts is bound to inspire suspicion among the non-expert; but I maintain that the alternative implied in the Green Paper, however alluring, is practically unworkable. To make pure research immediately accountable to the public at large and dependent upon public endorsement is the surest way to reduce it to mediocrity: it is to deliver Samsen shackled and shorn to the useful toil of the Philistine mill.

Quebec government plan largely illusory

The second desideratum of research, properly so-called, that it add to, or improve on, the corpus of human knowledge, should likewise be carefully noted. It means, in fact, that no "politique québécoise de la recherche scientifique" is possible, strictly speaking, since the object that the policy is intended to govern (the advancement of human knowledge) is not intraterritorial. The determination of the Québec government to fix the priorities of pure research within its political jurisdiction is largely illusory, not only because the frontiers of knowledge are in perpetual flux but also and chiefly because they are being constantly redefined by researchers beyond the borders of Québec. In the absence of efficient international concertation—an ideal as elusive today as ever—it is hard to see how a Québec science policy could avoid the pitfall of pointlessly duplicating research already in progress or accomplished elsewhere. There is, in my opinion, only one proven way of ensuring that such duplication will be avoided: reliance on the peer-evaluation of projects by experts, an option the Green Paper treats with conspicuous coolness. I do not deny that peer-

*Public control of academic research means, in practical terms, of course control not by the people but by government, and one would have to be extremely naive to overlook the dangers that such control threatens to intellectual freedom. In an age of increasing government intervention in the domains of education, language and culture — domains traditionally outside the legitimate sphere of the exercise of political power — state interference in academic research can only be welcomed by those blissfully ignorant of the lessons of history. Let them consider the plight of the American universities during the McCarthy years, the predicament of scientific research in Stalinist Russia and Hitlerist Germany, and be silent. Or let them read the prophetic concluding remarks of John Stuart Mill's essay *On Liberty* (1859), and be wise:*

A government cannot have too much of the kind of activity which does not impede, but aids and stimulates, individual exertion and development. The mischief begins when, instead of calling forth the activity and powers of individuals and bodies, it substitutes its own activity for theirs; when, instead of informing, advising, and, upon occasion, denouncing, it makes them work in fetters, or bids them stand aside and does their work instead of them. The worth of a State, in the long run, is the worth of the individuals composing it; and a State which postpones the interests of their mental expansion and elevation, to a little more of administrative skill, or of that semblance of it which practice gives, in the details of business; a State which dwarfs its men, in order that they may be more docile instruments in its hands,

even for beneficial purposes — will find that with small men no great things can really be accomplished; and that the perfection of machinery to which it has sacrificed everything, will in the end avail it nothing, for want of the vital power which, in order that the machine might work more smoothly, it has preferred to banish.

Can Quebec afford own policy?

Does Québec really need, can it really afford, an autonomous science policy of its own? Regardless of what its political future may hold, can a society composed of five million, already grievously overtaxed, individuals compete with any reasonable hope of success in the arena of front-line scientific research — an arena which nations many times its own size find increasingly costly to furnish with combatants? At a time when the U.S.A. and the U.S.S.R. are impelled more and more to resort to cooperative cost-and-information-sharing arrangements so as to mitigate the exorbitant expense of pioneering research (as in controlled hydrogen fusion), can Québec realistically proclaim its intention of taking its place in the vanguard of scientific research? Science, after all, knows no national boundaries; to expand its horizons, the investigator must work *à l'échelle du monde*, et non seulement *à l'échelle du Québec*. And how will the reality of the eventual science policy differ from the lofty idealisms that surround its conception? Will the Québec scientist, fettered by the set priorities of his government and submerged in a veritable morass of bureaucracy, find himself replicating archaic experiments in a laboratory furnished with archaic equipment? Will he ultimately become a servant of government, executing cost and feasibility studies for the *ministère des Transports* or des *Terres et Forêts*, because such jobs are the only jobs going?

It is a bleak prospect, and one unlikely to set too many scientific hearts pipatap with enthusiasm. Yet, if the Québec government is seriously committed to adopting a policy to foster the advancement of knowledge, there is much it can do at relatively moderate cost. For one thing, it could ensure through adequate funding of public, university and institutional libraries that books and periodicals which report the results of research in the sciences and the humanities are readily accessible to all Québec scholars. Through the establishment of computer banks and data-retrieval facilities in all regional centres or metropolitan areas, it could see to it that pertinent and up-to-date information in all disciplines and in all languages is generally available. By encouraging the massive translation of textbooks or — better still — by promoting a positive attitude towards the acquisition and cultivation of reading skills in various tongues by Québec students, it could defeat that tendency to parochialism which is, in the final analysis, the only real mark of intellectual colonialism.

Modest proposals

I am conscious that the measures that I am suggesting fall far short, in point of grandeur and glamour, of the *mesures et dispositifs d'ensemble* put forward by the government in its Green Paper. I acknowledge also that my modest proposals, if implemented, would not automatically catapult Québec overnight into the forefront of the international scientific community. But they would — and of this I am confident — at least earn her a fair and respectable place at the starting line, which more utopian schemes and projections might not. For, as someone once said about Plato's *Republic*, the strongest argument against utopian states is still that none but those who conceive them would wish to live in them.

Additional responses to the Green Paper published by FAPUQ are available at the CAUT central office.



International Development Office

Makerere Project

Applications are invited from Canadian faculty for short-term appointments at Makerere University, Kampala, Uganda. The project, funded by the Canadian International Development Agency and administered by the International Development Office of the AUCC, is intended to assist in the rehabilitation of Makerere University which urgently requires experienced staff. Applications will be considered in any academic field taught at Makerere but priority will be given to the areas of anaesthesiology, pharmacology, civil engineering, engineering mathematics, veterinary physiology, biochemistry and pharmacology, geology and biochemistry.

Candidates should be senior Canadian university faculty with experience in working in developing countries.

Appointments, which will be made by Makerere University, will be tenable for one or more four month academic terms beginning in May or June 1980. Outlets will involve teaching, reorganizing and up-dating curricula and re-establishing programs at the undergraduate, graduate and/or professional degree level. Benefits will include a Canadian salary and other allowances plus return travel to Kampala for the faculty member only. No provision is made for the travel or support of dependents. In addition, each faculty member's home university may receive some assistance towards his or her replacement costs.

Application forms may be obtained from the International Development Office and should be returned no later than Friday, February 15, 1980, to the attention of:

Dr. Michael Oliver
Director
International Development Office
151 Slater Street
OTTAWA, Ontario
K1P 5N1



Le Secrétariat pour le développement international

Projet Makerere

Le Secrétariat pour le développement international de l'AUCC sollicite des candidatures de professeurs pour répondre aux besoins immédiats du personnel enseignant de la Makerere University, Kampala, Ouganda. L'entreprise subventionnée par l'Agence canadienne de développement international, vise à rétablir quelques postes à la Makerere University, aux fins desquels la langue d'enseignement est l'anglais, plus particulièrement en anesthésiologie, pharmacologie, génie civil, mathématiques du génie, biochimie, physiologie et pharmacologie vétérinaires, géologie et biochimie.

La date limite pour l'envoi des candidatures est fixée au vendredi 15 février 1980.

Pour obtenir de plus amples renseignements et les formulaires de demande on est prié de s'adresser à:

Monsieur Michael Oliver
Directeur
Secrétariat pour le développement international
151, rue Slater
OTTAWA (Ontario)
K1P 5N1

Eureka—more money for NSERC

from page 4

and instead allows the province wider powers of taxation. Tax and cash transfers made available for purposes of funding post-secondary education are set at a percentage of total E.P.F. transfers to the provinces. However, Ottawa no longer exercises any control or influence whatsoever to ensure that these funds are in fact spent in support of universities.

The consequences of the faulty E.P.F. arrangements are already evident and could progressively get worse. For example, projections from the Federal Department of Finance indicate that cash and tax transfers to Ontario intended for post-secondary education will increase from an estimated \$871 million in fiscal 1978-79 to \$987 million in fiscal 1979-80. Yet, according to the Ontario budget for 1979, provincial expenditures relating to colleges and universities will increase by only \$57 million (from \$1,373 million to \$1,430 million). Thus it seems clear that in this province alone, over half of the increase in federal revenue made available for supporting universities will not be spent in the area intended.

Provincial underfunding of universities clearly is not compatible with maintenance, much less development, of research in Canada. Nor is it compatible with the need to develop a strong scientific work force. If supply of and demand for scientific personnel are to be co-ordinated in order to improve R & D for the national benefit, there must be a far greater degree of cooperation between the two levels of government.

The Minister's announcement of November 15 points out that the President of NSERC and members of his Council are planning to consult with the provinces extensively over the next two months, and states: "Issues that arise in these talks will be brought to my attention." We can only hope that Mr. Gaffney will display as much energy and conviction in resolving the problem of Canadian scientific manpower as he did in convincing his colleagues in the federal Cabinet that NSERC should receive a substantial budget increase.

A second fundamental problem area in the NSERC Five-Year Plan is its proposal to use the Gross National Expenditures Implicit Price Index (G.N.E.—I.P.I.) as a proxy science deflator. According to the Plan, the budget for so-called "Free Research" in each of the next five fiscal years will be determined by:

- the percentage increase in the G.N.E.—I.P.I. in the previous fiscal year
- plus the percentage real increase in G.N.P. during the previous fiscal year
- plus one per cent.

Inclusion of the latter two factors presumably reflects NSERC's strategy that it cannot ask the government for a budget allocation that significantly exceeds the projected growth in the Canadian economy as a whole. The first factor, annual change in G.N.E.—I.P.I., is intended to compensate for the well-known, escalating costs of doing scientific research on a year-to-year basis.

In principle, NSERC's decision to employ the G.N.E.—I.P.I. as a cost-of-research deflator is an error for two main reasons:

(i) The total research budgets of the three federal granting agencies (approximately \$370 million in fiscal 1978-79) constitute a very small fraction of the Gross National Expenditures (estimated to be \$232,800 million in 1978). Annual price movements for goods and services used in scientific research have therefore only a minor effect on the G.N.E.—I.P.I.

(ii) The great majority of cost movements in the G.N.E.—I.P.I. are irrelevant to science activities. The index is derived by calculating annual increases in some 300 items of typical Canadian expenditure grouped under several major aggregations: personal expenditure on consumer goods

and services; government current expenditure on goods and services; gross fixed capital formation (including farm and grain in commercial channels, and export of goods and services minus imports of goods and services).

These G.N.E.—I.P.I. categories are for the most part quite unrelated to those used to construct a specialized cost-of-research index, such as NRC's Research Expenditure Index (NRC-RE). A few years ago the NRC used actual grant expenditure data to determine precisely how much was spent by its grantees on salaries and stipends for post-graduate students; salaries and stipends for post-doctoral assistants; salaries for other assistants (research associates, technicians, summer students, etc.); minor equipment; major equipment; travel; computing services; publications; conferences; international exchanges; etc. Cost increases for each of these expenditure items in the previous year were then determined using the appropriate Statistics Canada price index.

The woeful inadequacy of the G.N.E.—I.P.I. as a science cost deflator can be seen from the following: Since 1971 this index has understated the severity of inflation on NRC (NSERC) budgets by a total of 60 index points, or approximately \$30 million. Secondly, the magnitude of differences between inflation rates measured by an accurate cost-of-research indicator (eg. the NRC-RE) and the G.N.E. has grown progressively larger during the past decade, resulting in a growing disadvantage for science with respect to the rest of the Canadian economy.

In view of the fact that its Five-Year Plan is a comprehensive and generally sound strategy for the 1980's, it is difficult to criticize NSERC for choosing the G.N.E.—I.P.I. However, the principle here is fundamental and important: No sector of the economy should have the effects of inflation on it misrepresented. The G.N.E.—I.P.I. clearly does not measure the costs of doing research and therefore must not be employed for this purpose. NSERC should either develop an accurate science expenditures deflator or base its budget requests on a fixed percentage of G.N.P. or some similar formula. To do otherwise is akin to proselytizing the fraudulent myth that scientific goods and



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The emerging crisis

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towards developing a sensible national policy in this area.

1. *Universities and Academic Research at the Crossroads*: Science Council of Canada, September, 1979.
2. Problems could also arise in trying to meet the demand from foreign sources, since the demographic problem is not exclusively Canada's: cf. *Basic Research in the United States*, Science, Vol. 204, May, 1979.
3. Between the Fall of 1976 and early 1978, the Ministry of State for Science and Technology (MOSST) developed a fully computerized Highly Qualified Manpower (HQM) data bank and projection model which provides annual information from 1971 to 1985 on the demand for some 70 HQM occupations, and on the demand for university graduates by degree level and some 70 fields of study. A university sub-model provides analogous information for 60 different teaching specialties.
4. *Towards Integration and Maximization of Resources Applied to Research and Development in Canada*. D.F. Metrick, May 1977.
5. *Federal Science Activities, 1979-80*, Ministry of State for Science and Technology, pp. 77-78.

NATIONAL NOTES

by Jill Greenwell (Relations with Government Officer)

CAUT urges admission of Russian Professor

Sparktak Begelov, a professor of journalism at Moscow State University, was recently refused admission to Canada for security reasons. Mr. Begelov, a prominent international affairs writer who is a political observer for the Novosti Press Agency and has his own political affairs programme on Moscow television, was part of a four-man delegation invited by the Canadian Peace Council. The delegation was to have addressed a meeting of the Carleton University Students Association and to meet with federal and provincial legislators and union officials. The visit was cancelled when Mr. Begelov was refused a visa. The CAUT has written to Mr. Ron Atkey, Minister of Employment and Immigration at the time, suggesting that Mr. Begelov's case be referred to a special immigration tribunal which reviews confidential security cases. The CAUT in its letter pointed out that Canada has frequently criticized Soviet violations of the Helsinki accords and that it would be unfortunate if Canada were guilty of similar breaches of the agreement.

Student assistance study conducted without students

Secretary of State, David MacDonald, has advised the National Union of Students that there is little chance that they will be given direct representation on the federal-provincial task force on student assistance. He noted that the task force was a government project rather than a public task force, and would therefore not be open to non-governmental organizations or representatives. If the task force invited an NUS representative to take part in its investigations, it would have to be open to all interested groups.

The CAUT has written to the Council of Ministers of Education urging student representation on the task force since the issue is of great concern to all students. The Association has also suggested that the task force be funded so that it can hold public meetings in each province. Failing the appointment of an NUS representative, the CAUT has urged that the Council make all information collected by the task force available to the NUS for comment.

Political interference feared in Manitoba

Fears of political interference in the internal workings of Manitoba's universities are growing. Last year, the nine-member Universities Grants Commission which allocates almost \$100 million in government funds to the provinces three universities, took the unprecedented step of refusing to approve a Ph.D. programme in Anthropology—despite the fact that staff, library facilities, etc. were already available and there would be no cost implications. After widespread protest, the UGC backed off on its decision.

Earlier this year, the government terminated the appointment of an NDP-appointed faculty member of the UGC one year early, and appointed three new members, including the private secretary of Conservative M.P., Alter Dinsdale—leaving the Commission without any academic representation. Now the Commission has asked the universities to supply a complete breakdown of every faculty, the numbers of students in each course or section, the names of staff members and the courses each teaches. While the UGC has received this information from the universities regularly for a number of years, it is the first time that the names of individual professors has been requested. Although the Commission does not have the power to fire a professor, it does have a mandate to eliminate programmes and there are fears that it is leaning towards cost accounting. The universities are reported to have given the information demanded but have not divulged individual identities.

Widespread movement to restrict foreign students

Tom Symons, Honorary Treasurer of the Association of Commonwealth Universities, and AUCU Commissioner on Canadian Studies, has asked that the issue of university fees for foreign students be put on the agenda of the ACU meeting in India in December 1979. A number of Commonwealth countries, including Canada, Britain, Australia and New Zealand, have recently raised their fees substantially for foreign students. Starting September 1980, foreign students studying for a bachelors degree in Britain will pay £2,400 a year in tuition and post-graduates £3,100. The Australian government on the other hand, requires payment of the fee prior to the issuance of a visa. Masters and Ph.D. students will have to pay £2,500 (Australian) per annum, those taking courses in medicine, veterinary sciences and dentistry pay £2,000 per annum and others £1,500. No special fees for foreign students were levied prior to the implementation of the new policy.

Saskatchewan Tories elect new leader

Grant Devine, a 35-year-old professor of agricultural economics, was elected new leader of the Saskatchewan Tories recently. Devine, on leave of absence from the University of Saskatchewan, succeeds Richard Colver who rebuilt the party to opposition status during his six and a half years as leader.

In a speech at the leadership convention, Devine attacked the NDP government for nationalizing the potash industry, for spending tax dollars on agricultural land banking and for pushing ahead rapidly with uranium mining projects.

Freedom of information in New Brunswick

New Brunswick's Right to Information Act, which for the first time establishes a right of public access to provincial government documents, will be proclaimed January 1, 1980.

Passed in June 1978, the Act allows access by any person to all information relating to the public business, subject to a limited number of exclusions. The exclusions cover personal information about another person; the administration of justice; active negotiations; confidential information from other governments; and opinions or recommendations to Ministers from public servants.

Obscenity review hoisted temporarily

Minister of Justice, Jacques Flynn, has advised the CAUT that no changes are contemplated in the obscenity provisions of the Criminal Code until a comprehensive review of the Code has been completed. The government will, in its study, be addressing the fundamental policy issues and principles upon which the Criminal Code should be based and will examine the inadequacies of the present provisions of the code, including those dealing with obscenity. The CAUT has requested an opportunity to meet with those who will be drafting the obscenity provisions of the Code.

Changes in British Columbia

Patrick L. McGeer, former minister of Education, Science and Technology, becomes the new Minister of Universities, Science and Communications following a November 23 Cabinet shuffle. Brian Smith becomes the new Minister of Education.

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Winnipeg, Manitoba
R3E 0Z3

AMNESTY INTERNATIONAL

by Genevieve Cowgill

Guatemala

"Death or exile is the fate of those who fight for justice in Guatemala"—Francisco Villagrán Kramer, Vice President, Guatemala, March 22, 1979

Amnesty International has not been able to identify a single long term Prisoner of Conscience case in Guatemala today. Human rights violations have become an everyday problem for many sectors of the Guatemalan population. These violations are of the most alarming nature: kidnappings, "disappearances," torture and murders. When citizens are arrested, it is often without charge or on such charges as "disturbing the peace" or "distributing subversive literature" which are subsequently dropped for lack of evidence. Such short term detention appears to be a form of intimidation and harassment.

Guatemalan newspapers note daily the number of bodies found throughout the country. The average over the past year has been reported as between six and nine, but on some days as many as 17 bodies have been recovered. Victims are often found mutilated and at a great distance from the place of abduction. Amnesty International estimates that well over 2,000 people have been killed for political reasons in Guatemala in the past 18 months.

Recent violence has not been confined to prominent individuals. Victims include trade unionists, campesinos, politicians, the rural population, journalists, lawyers, teachers and students, and religious figures. Their only apparent "crime" has been their opposition to the government or their attempts to assert their right to organize or to retain their farm lands in the face of government development schemes. Much of the violence has been perpetrated by clandestine death squads which operate with apparent government complicity.

Violence has been a long term problem in Guatemala, but since the 1977 inauguration of General Lucas García, the outright killings and "disappearances" have escalated dramatically. In the first five months of General Lucas García's administration, Guatemala journalists noted reports of more than 500 victims of violence, 200 of whom appeared to have been tortured. In May 1978, a hundred Kekchi Indians, including 25 women and children, were massacred at the town of Panzós in Northern Guatemala. They had come to discuss with authorities a dispute over land which they had farmed for several generations. Local residents later said that mass graves had been prepared for the Indians two days before they arrived at the town.

An Amnesty International mission which visited Guatemala during August, 1979 concluded that "to be a union leader or active member of a trade union in Guatemala today means risking one's life." The delegation, consisting of Dan Gallin, General Secretary of the International Union of Food and Allied Workers Associations, Fernando Alvarez de Miranda, former President of the Spanish Cortes and a member of Amnesty International's International Secretariat. The delegation also reported that leaders and supporters of both legal and unregistered political parties intending to contest the 1982 elections have been a prime target for intimidation and assassination. The Democratic Socialist leader, Deputy Alberto Fuentes Mohr was killed in January 1979 just a few hours before his group was to present its request for registration as a political party. The popular former mayor of Guatemala City, Manuel Colón Argueta, leader of the *Frente Unido de la Revolución* (FUR), was killed in March 1979 along with two body guards. Despite the demands of his family and international bodies, the government has made no official findings available concerning the responsibility for their deaths.

The pattern of violence for political figures and for many Guatemalan citizens, regardless of their profession, remains virtually the same. Threats, government denial of protection, abduction, torture, murder, and finally neglect on the part of the government to investigate these violent incidents, characterize the situation. Teachers, students and university administrators have all been subject to severe repressive measures because of their frequent outspokenness against government policy, their work in educating the campesinos, and their constant interaction with and assistance of the labour movement. Student leader, Oliviero Castañeda, President of the Organization of Students at the University of San Carlos was killed in October, 1978 moments after addressing a Revolution Day Rally in Guatemala City. The attack took place within sight of police and army guardsmen patrolling the demonstration; the ears involved had been circling throughout the demonstration. Hundreds of people witnessed the execution. Nevertheless the killers got away. No police car succeeded in following the four cars involved. No one even tried. The authorities claim they have no trace of the murderers.

Families and associates of those who have suffered abuses, as well as international political and human rights organizations, have repeatedly called on the authorities to end the violence and bring the perpetrators to justice. In February, 1979, President Lucas García responded by comparing violence to an "allergy" that one must learn to live with. On another occasion, the President claimed that it would need a "magic wand" to eliminate violence in Guatemala.

Guatemala is a society of fear. Over the past decade, the widespread violence in one of the most repressive countries in Latin America has largely gone unnoticed by the international community. The shocking and widespread violations of human rights in Guatemalan society warrant international attention.

Memorial University of Newfoundland Faculty of Medicine CARDIOLOGIST REQUIRED

The Faculty of Medicine at Memorial University of Newfoundland and the General Hospital invite applications for a senior geographic full-time appointment in cardiology at the Health Sciences Centre. The successful candidate will have major responsibilities in the teaching programs at the undergraduate and postgraduate levels. Demonstrated abilities in clinical, teaching, and research activities will be important. Academic rank and salary will be negotiated in relation to experience and other factors. Apply with curriculum vitae to Dr. G. S. Chiu, Acting Chairman, Memorial University of Newfoundland, Health Sciences Centre, St. John's, Newfoundland, A1B 3V6

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services are indeed purchased in supermarkets, hardware stores and real estate agencies.

How NSERC may spend its money

In formulating the Five-Year Plan, NSERC made a decision that it should undertake a detailed assessment of major programs with its jurisdiction and their individual needs, rather than develop a simple global expenditure requisition. "By doing so", the document acknowledges, "it is recognized that Council runs the risk of exposing its programs to selective incremental funding".

Further the Plan says: "While alternative activity and funding priorities are presented in this Section (of the document), NSERC wishes to record its position that the final allocation of funds within its total program should remain with the Council."

"Alternative I"

This is the "Plan of Action" already outlined in this article and, according to the NSERC document, "is the only alternative which carries the support of the Natural Sciences and Engineering Research Council". Under this proposal the total budget of NSERC programs would be raised from the current base of \$118.4 million to \$294.6 million in 1984-85. The \$176.2 million additional that is requisitioned under "Alternative I" would be apportioned as follows: Manpower programs, \$66.2 million; Equipment, \$48.7 million; "Targeted Research", \$23.6 million; "Free Research", \$32.0 million; and, General Programs \$5.7 million.

On the basis of this proposed allocation "targeted research" support, as a proportion of the total NSERC program budget, will increase from about 14% in 1979-80 to 34% in 1984-85. In absolute amounts, there would be a six-fold increase in "targeted research" funding from the present \$16 million to about \$100 million in 1984-85; approximately \$63 million of that amount would result from manpower and equipment initiatives.

Under "Alternative I", by 1984-85 "approximately 60% of all funds provided by NSERC will contribute to research and research-related activities in direct support of specific socio-economic objectives. The remaining 40% of NSERC's support aims primarily at the general advancement of scientific and technological knowledge...."

The total amount requisitioned to initiate the "Alternative I Plan of Action" is \$187.9 million for fiscal 1980-81. As noted earlier, however, the government approved a 1980-81 budget of \$159.8 million.

"Alternative II"

In this plan the manpower programs proposed under "Alternative I" would be cut by one-half at the undergraduate level, and most of the scholarship, fellowship and industrial research associate programs would be reduced by varying degrees. In total, the skilled manpower program allocation, 1980-81 through 1984-85, would be reduced from \$291.6 million to \$233.9 million.

Equipment program support would be reduced by a total of \$57.8 million, from \$261-million to \$203.8 million over the 5-year period. This would be done by cutting the "Catch-up element of the equipment program by one-half".

According to "Alternative II" the "non-targeted research programs would increase at a real growth rate...equal to the G.N.P. growth rate". The total 5-year allocation for "Free Research" would be \$12.4 million less than under "Alternative I" (\$445.5 million versus \$457.9 million).

To initiate the programs spelled out in "Alternative II", \$173.3 million would have been needed in fiscal 1980-81.

"Alternative III"

This is the option which the government has decided to support. Under this alternative, the Plan proposes to make the following additional cutbacks:

- A total cut of the undergraduate research support program and the Industrial Research Scholarship program. Other industry related manpower programs would be reduced further as would those tenable within universities. The University Research Associates program would not be affected in the five-year "review period" but would plateau at a lower level during the late 1980's and early 1990's. The skilled manpower program would in total receive \$101.2 million less, 1980-81 to 1984-85 inclusive, than proposed in "Alternative I".

- The "non-targeted" research programs would increase at a "real growth rate" between 1980-81 and 1984-85, equal to the GNP growth minus 1%. Assuming an average annual increase in GNP of 4.5% for each of the next five years, "non-targeted" research would receive a total of \$431.2 million prior to 1986.

- The "catch-up" equipment program would not be funded. The overall equipment program, 1980-81 through 1984-85, would receive \$150.9 million or \$110.7 million less than under "Alternative I".

In summarizing the probable effects of implementing "Alternative III" instead of the preferred "Plan of Action", the NSERC document states: "The interface between industry and university researchers would be diminished through the loss or reduction in proposed manpower programs and the actual university research effort would fail to move ahead at the rate required to meet the announced national R & D target. Average growth of the total program over the 6-year period 1979-80 to 1984-85 would be equal to GNP growth + 7.0% assuming the residual manpower programs were fully successful".

In the Foreword, NSERC President, Gordon McNabb, issues a strong challenge to the Canadian scientific community:

"...In the development of this plan (NSERC's) Council has been very much aware of the urgent need to improve the whole atmosphere surrounding research and research training in the universities throughout the country and to rebuild the confidence, optimism and motivation so essential for the present and future researchers on whose accomplishments and leadership the scientific and technological progress of the nation ultimately depends. The existing programs and the new initiatives proposed by Council must grow quickly if the ambitious goals expressed by the government are to be approached in the foreseeable future.

"It is hoped that the release of this plan will generate enlightened discussion on how, and to what levels, the various new initiatives proposed by Council can best be implemented with a minimum of delay."

This challenge should, indeed must be taken up by the members of the CAP. The 32% increase of NSERC's 1980-81 budget suggests a strong commitment by the federal government to supporting R & D in Canada. This does not, however, ensure that the erratic pattern of "on-and-off" funding support for the granting agencies seen throughout the past decade will not repeat itself in the 1980's.

Money, moreover, it is not the only potential problem. The Government of Canada, as well as NSERC, presume that industry's share of R & D will increase substantially in the next few years. So far, there is little evidence available to justify this optimism. Until the complex and somewhat tangled web of elements collectively known as "industrial strategy" can be sorted out, the now popular assumption that industry's share of R & D performance will grow from 42% to 65% of the national total seems like wishful thinking.



Federal ridings with universities and/or colleges

UNIVERSITY AND RIDING	ADDRESS	M.P. AND PARTY	UNIVERSITY AND RIDING	ADDRESS	M.P. AND PARTY
ACADIA (Annapolis Valley-Haunts)	Wolfville, Nova Scotia B0P 1X0	J. Patrick Nowlan, P.C.	NOTRE DAME U. of NELSDN (Kootenay West)	Nelson, B.C. V1L 3C7	Bob Brisco, P.C.
ALBERTA (Edmonton South)	Edmonton, Alberta	Doug Roche, P.C.	N.S. TECHNICAL COLLEGE (Halifax)	Halifax, N.S. B3J 2X4	George Cooper, P.C.
ALGOMA (Sault Ste-Marie)	Sault Ste. Marie, Dnt. P6A 2G4	Cyril Symes, N.D.P.	O.I.S.E. (Spadina)	252 Bloor St. Toronto, Ont. M5S 1V5	Peter Stollery, LIB
ATHABASCA (Edmonton West)	14515 - 122 Avenue Edmonton, Alta. T5L 2W4	Marcel Lambert, P.C.	DTTAWA (Dttawa-Vanier)	Ottawa, Ontario K1N 6N5	Jean-Robert Gauthier, LIB
BISHOPS (Sherbrooke)	Lennoxville, Québec J1M 1Z7	Irénée Pelletier, LIB	POLYTECHNIQUE (Montreal-Outremont)	2500 Marie Guyard Montreal, P.Q. H3C 3A7	Marc Lalonde, LIB
BRANDON (Brandon-Souris)	Brandon, Manitoba R7A 6A9	Walter Dinsdale, P.C.	P.E.I. (Hillsborough)	Charlottetown, P.E.I. C1A 4P3	Thomas McMillan, P.C.
BRITISH COLUMBIA (Vancouver Quandra)	Vancouver, B.C. V6T 1W5	Bill Clarke, P.C.	QUEEN'S (Kingston & the Islands)	Kingston, Ontario K7L 3N6	Flora MacDonald, P.C.
BROCK (Welland)	St. Catharines, Ont.	Gilbert Parent, LIB	REGINA (Regina East)	Regina, Saskatchewan S4S 0A2	Simon de Jong, N.D.P.
CALGARY (Calgary West)	Calgary, Alberta T2N 1N4	Jim Hawkes, P.C.	SAINTE-ANNE COLLEGE (South West Nova)	Churchpoint, Digby County NOVA SCOTIA, B0W 1M0	Charles E. Haliburton, P.C.
CAPE BRETON (Cape Breton-The Sydneys)	Sydney, Nova Scotia B1P 6J1	Russell MacLellan, LIB	ST. BONIFACE COLLEGE (St. Boniface)	St. Boniface, Manitoba R2H 0H7	Robert Bockstael, LIB
CARLETON (Ottawa-Centre)	Ottawa, Ontario K1S 5B6	John Evans, LIB	ST FRANCIS XAVIER (Cape Breton Highlands-Canso)	Antigonish, N.S. B0H 1C0	Allan J. MacEachen, LIB
CONCORDIA-LOYDLA (Montréal Notre-Dame-de-Grace)	7141 Sherbrooke St. West Montréal, P.Q. H3G 1M8	Warren Allmand, LIB	ST. JOHN'S COLLEGE (Winnipeg-Fort Garry)	Winnipeg, Manitoba R3T 2M5	Lloyd Axworthy, LIB
CONCORDIA- SIR GEDRGE WILLIAMS (Montréal St. Henri-Westmount)	1455 de Maisonneuve blvd. W. Montréal, P.Q. H3G 1M8	Donald Johnston, LIB	SAINT MARY'S (Halifax)	Halifax, N.S. B3H 3C3	George Cooper, P.C.
DALHUSIE (Halifax)	Halifax, Nova Scotia B3H 3J5	George Cooper, PC	ST. THOMAS (York-Sunbury)	Fredericton, N.B. E3B 5G3	Robert Howie, P.C.
FRAPPIER, INST. ARMAND (Montréal Laval des Rapides)	351 boul des Prairies Ville Laval, P.Q. H7N 4Z3	Jeanne Sauvé, LIB	SASKATCHEWAN (Saskatoon East)	Saskatoon, Sask. S7N 0W0	Bob Dgle, N.D.P.
GUELPH (Guelph)	Guelph, Ontario N1G 2W1	Albert Fish, P.C.	SHERBROOKE (Sherbrooke)	Boul. de l'Université Sherbrooke, P.Q. J1K 2R1	Irénée Pelletier, LIB
C.U. de HEARST (Cochrane)	Hearst, Ontario P0L 1N0	Keith Penner, LIB	SIMON FRASER (Burnaby)	Burnaby, B.C. V5A 1S6	S. J. Robinson, N.D.P.
LAKEHEAD (Thunder Bay Nipigon)	Thunder Bay, Ontario P7B 5E1	Robert Andras, LIB	TDORONTO (Spadina)	Toronto, Ontario M5S 1A1	Peter Stollery, LIB
LAURENTIAN (Nickel Belt)	Sudbury, Ontario P3E 2C6	John Rodriguez, N.D.P.	TRENT (Peterborough)	Peterborough, Ontario K9J 7B8	Bill Dornin, P.C.
LAVAL (Louis-Hébert)	Québec, P.Q. G1K 7P4	Dennis Dawson, LIB	VICTORIA (Victoria)	Victoria, B.C. V8W 2Y2	Allan McKinnon, P.C.
LETHBRIDGE (Lethbridge-Foothills)	Lethbridge, Alberta T1K 3M4	Blaine Thacker, P.C.	WATERLOO (Waterloo)	Waterloo, Ontario N2L 3G1	Walter McLean, P.C.
MANITDBA (Winnipeg-Fort Garry)	Winnipeg, Manitoba R3T 2N2	Lloyd Axworthy, LIB	WESTERN ONTARIO (London West)	London, Ontario N6A 3K7	Judd Buchanan, LIB
McGILL (Montreal-St. Jacques)	Montreal, P.Q. H3C 3G1	Jacques Guibault, LIB	WILFRID LAURIER (Waterloo)	Waterloo, Ontario N2L 3C5	Walter McLean, P.C.
McMASTER (Hamilton West)	Hamilton, Ontario L8S 4L8	Lincoln Alexander, P.C.	WINDSOR (Windsor West)	Windsor, Ontario N9B 3P4	Herb Gray, LIB
MEMORIAL (St. John's East)	St. John's, Nfld. A1C 5S7	James A. McGrath, PC	WINNIPEG (W. North Centre)	Winnipeg, Manitoba R3B 2E9	Stanley Knowles, N.D.P.
MONCTON (Moncton)	Moncton, N.B. E1A 3E9	Gary McCauley, LIB	YORK (Toronto York Centre)	Downsview, Ontario M3J 1P3	Bob Kaplan, LIB
MONTREAL (Montreal-Outremont)	Montreal, P.Q. H3C 3J7	Marc Lalonde, LIB	ROYAL MILITARY COLLEGE (Kingston & the Islands)	Kingston, Ontario K7L 2W3	Flora MacDonald, P.C.
MOUNT ALLISON (Westmorland-Kent)	Sackville, N.B. E0A 3C0	Roméo LeBlanc, LIB	COLLEGE MILITAIRE RDYAL (St. Jean)	Saint-Jean, P.Q. J0J 1R0	Paul-André Masse, LIB
MDUNT ST. VINCENT (Halifax West)	Halifax, N.S. B3M 2J6	Howard Crosby, P.C.	ROYAL ROADS MILITARY COLLEGE (Esquimalt-Saanich)	Victoria, B.C. V0S 1B0	Don Munro, P.C.
NEW BRUNSWICK (York-Sunbury)	Fredericton, N.B. E3B 5A3	Robert Howie, P.C.	KING'S COLLEGE (London East)	London, Ontario N6A 2M3	Charlie Turner, LIB
NIPISSING U. COLLEGE (Nipissing)	North Bay, Ontario P1B 8L7	J.-J. Blais, LIB	N.B.: UNIVERSITY OF CALGARY (Calgary Centre)	Calgary, Alberta T2S 0B2	Harvie Andre (Dr.) P.C.
N.S. COLLEGE OF ART & DESIGN (Halifax)	Halifax, N.S. B3J 3J6	George Cooper, P.C.			

Federal election 1980: more campaign promises

The recent promise to substantially increase federal support for NSERC notwithstanding, Canada's scientific community is left with a hefty agenda in the current election campaign.

There is the matter of NSERC's 1980-81 budget: A \$39 million increase was approved by the Cabinet prior to dissolution, but officially funds cannot be allocated until Parliament reconvenes and the Main Estimates for 1980-81 are tabled. NSERC's various committees must in the meantime cope with the difficult (but by now familiar) task of having to adjudicate grants and program competitions without knowing how much money will be available.

An even greater predicament confronts the Medical Research Council whose "Five-Year Plan" was rejected by the Cabinet Committee on Social and Native Affairs in late November. MRC consequently has to face the bleak prospect of a 9% budget increase in the next fiscal year, instead of the approximately 20% asked for in their submission to the government.

Then too we must gauge the probably deleterious impact on industrial R & D of the recent federal budget. No new federal initiatives to stimulate high-technology industry were forthcoming on December 11, despite repeated previous assurances to the contrary.

Finally, there is a large volume of unfinished "other business" that urgently requires attention. Some of the key issues were summarized in recommendations made to the Minister of State for Science and Technology in the submission by CAP and CFBS on December 12:

- A long-term policy for federal funding of R & D to confer much needed stability to the Canadian research effort and substantially reduce cost ineffective on-and-off funding and planning.

- A federal government review of existing fiscal transfer arrangements with the provinces to ensure that Canadian universities will in future receive provincial support at a level commensurate with the national target of 2.5% G.E.R.D./G.N.P.

- An early announcement by the Government of Canada of its timetable for implementing collaborative R & D programs especially in regard to the already proposed "Industrial Innovation Centres" and "Regional Centres for Excellence".

- The development of a federal-provincial strategy for recruiting, training and retaining new Canadian scientists. This must be accompanied by coordinated increases in funding from both levels of government.

In order to establish how the federal political parties propose to deal with these major challenges, Physics in Canada, C.F.B.S., and the C.A.U.T. recently asked M.P.'s to answer seven questions relating to science and industrial policy and research funding. The questions and the politicians' answers are reported below.

The C.A.U.T. and the C.F.B.S. additionally asked two questions relating to freedom of information legislation. Such legislation was before the House of Commons when the government fell (see lead article). The first question deals with one of the key matters in this area, namely the right to judicial review. The second takes up a point raised by the Social Science Federation before the parliamentary committee to ensure the access of researchers.

The fiscal transfers in the area of postsecondary education involve more than 1.7 billion dollars. They have always been negotiated between the federal and provincial governments with unreasonable secrecy. Hence the question about consultation prior to the proposal of any changes by the federal government.

Questions on Federal R & D Policy

1. Compared with the level of investment in research and development in other Western industrialized countries, the Canadian effort, at 0.9 per cent of G.N.P., is very low. In your party's view, what per cent of G.N.P. should Canada spend on R & D by 1983? By 1990?
2. What role does research and development have in your party's economic strategy for the 1980's?

3. The Canadian scientific community has repeatedly urged the federal government to establish a long-term (3 year to 5 year) funding policy for the MRC, NSERC and SSHRC. Is it the intention of your party to formulate and adopt such a policy if elected on February 18?

4. Several M.P.s have publicly suggested that the major shortfall in Canada's R & D effort is in the private sector rather than in government or university laboratories. Do you agree with this evaluation? What specific measures would your party introduce to stimulate industrial R & D in Canada?

5. What role should the universities play in "technology transfer"?

6. In terms of the national priorities for science and technology, what roles should "basic" and "applied" research have in our overall R & D effort?

7. If elected, what steps will your party take to ensure that Canada has sufficient scientific manpower to meet the technological challenges of the 1980's?

Questions on Freedom of Information and Support for Postsecondary Education

8. Does your party support a Freedom of Information Law with binding appeal mechanisms through the courts?

9. Does your party support the amendment proposed by the Social Sciences Federation of Canada to the previous federal government's Freedom of Information Legislation to ensure access to government documents for purposes of beneficial research?

10. Does your party favour consultation with various organizations representing the higher education community before any significant changes are proposed by the Federal Government of Canada in the Established Programs Legislation pertaining to the funding of postsecondary education?

- Proposed amendment to the Freedom of Information Bill introduced by the Conservative government:

19(2)(d). Information relating to individuals to be used by the recipient for research and statistical purposes that have been approved by the head of the government institution to whom the request has been made, on the basis of principles and appeal procedures established by regulation.

NEW DEMOCRATIC PARTY

(The following answers were received from Mr. David Orlowik, M.P. for Winnipeg North and his party's Science and Technology Critic).

1. While other industrialized nations are spending an average of 2.5% of G.N.P. on research and development, Canada's research spending has declined steadily from 1.1% of G.N.P. spending in 1969 to the present level of 0.9% of G.N.P. Unless we take immediate steps to improve this dismal record, we will lose our ability to compete in world markets or to play a meaningful industrial role in the 1980's.

Canada needs more private sector spending on research and development but this will not come without a major effort on the part of the federal government to coerce multinational corporations to do more R & D spending here and to encourage smaller firms to invest more in R & D spending.

The NDP believes that the federal government should act now to increase research spending to at least 2.5% of G.N.P. within the next three years and to attain a level of at least 4% of G.N.P. spending by 1990.

The Conservative government's announcement of November 15, 1979 of a 32 per cent hike in 1980-81 federal funding for the Natural Sciences and Engineering Research Council (NSERC) was quite properly welcomed by those interested in increasing Canada's efforts in R & D. However, failure of the government to increase funding for the National Research Council (NRC) and government laboratories mean that these important organizations are again being denied the necessary funds. It is also difficult to understand why there were no new proposals in the November budget to encourage increased R & D efforts by private industry.

2. The NDP believes that an industrial strategy for Canada is the only way out of our present economic woes. One of the first thrusts of such an industrial strategy would be immediate attention to our research and development goals. Researchers in this area believe that the return on R & D spending is \$30.00 for each \$1.00 spent on R & D and since high technology industries are more resistant to inflation, it would seem that an investment in R & D is an investment in national economic health through job creation and export sales and all the other spin-off benefits that scientific research brings.

3. The NDP is urging a long term funding plan for the funding of the three federal councils. We recognize that scientific research cannot be undertaken in an atmosphere of uncertainty. Scientists will be loathe to start important projects only to find that they are cut back when the government of the day decides that other claims for funding are more important. If elected, the NDP will propose a substantial government commitment to long term maintenance of funding on a continuing basis so that researchers may plan with confidence.

4. The exploitation of scientific research for Canada's economic benefit requires greater attention to our manufacturing sector and especially in the area of high technology, labour intensive industries. Canadian industry now contributes only 43.2% of Canada's research and development in natural sciences as opposed to 68% in the U.S. and Sweden and over 60% in the major industrial OECD countries.

The NDP believes that the private sector should be encouraged to do more R & D in Canada. Because a large part of our economy is foreign controlled and because multinationals prefer to reserve their major research effort for their head offices, little industrial R & D is done by them in Canada. These multinationals should be coerced, through tax measures, into doing more R & D here and so return to this country some of the profits which they gain by using Canadian facilities. I believe that my party would endorse a system of tax surcharges for all companies whereby a certain percentage of corporation taxes would be put into a special fund which would be drawn upon by any company, multinational, medium or small which indicated its willingness to do R & D in Canada and which would lead to the expansion of the manufacturing industries. So far, tax incentives have had no appreciable effect on the amount of R & D done in Canada and it is time to take sterner measures.

Small and medium sized Canadian companies also have a meaningful role to play in industrial R & D and because they may need more financial support, the federal government should do all it can to encourage them. In this vein, it is estimated that Japan subsidizes about 90% of industrial R & D, West Germany 80%, France and the United States 60%, the United Kingdom 50%, Sweden 45% and Canada follows at a low of 12%. This support comes in the form of outright subsidies, grants, loans, contracts and incentives among other measures. The Canadian effort in this regard falls far short of that of other industrialized nations.

5. Research knowledge which could be used by the private sector should be made available to them with the minimum of administrative restrictions. I believe that the federal government should act as a go-between so that where possible, any discoveries made in the universities could be used by the private sector in a practical way. The

right to patents, etc. should either be kept by the universities or by the federal government.

6. The NDP believes that a comprehensive science policy must address itself to curiosity-motivated research, mission-oriented research and applied industrial research. A very good example of this is the recent research in government laboratories in the West which has made possible the development of a species of rapeseed worth hundreds of millions of dollars. (See Science Forum of May-June 1979).

Before good applied research can be done, basic research is a must. Some scientists see the two as inextricably bound. We are unable to tackle the problem of developing marketable technology unless we know how to do it.

Too many of our politicians take the view that research *per se* is a luxury we cannot afford. They ignore the fact that curiosity motivated research is important because it supports the development of innovative technology. Basic research is also an important part of teaching and educating advanced students. Such research must be maintained to provide fresh talent and expertise and to stimulate our future scientists.

Canada's efforts in the field of basic research only reflects our inattention to scientific research as a whole over the last 10 years. The proportion of GNP spent on basic research by the federal government through the two main funding agencies, National Research Council and the Medical Research Council, declined from 0.1% in 1969 to 0.07% in 1976 while other industrialized nations in the same period were spending anywhere from 0.3% to 0.6% of GNP on basic research. My party believes that adequate funding of at least 0.4% of GNP should be maintained for basic research. Once our effort in the basic research area is stepped up, we will be in a better position to promote more applied research. We will also be in a better position to encourage more industrial research in the private sector as well.

7. Although the NDP has not specifically discussed this question, it is obvious that the present government cannot reach this level of 2.5% of GNP spending on scientific research without a much enhanced scientific and technological manpower capability. Statistics prepared by those in the field estimate that in order to reach the present government's stated target of 2.5% of GNP to be spent on research and development by 1983, we will need an increase of approximately 25,000 scientists. But if the present trends continue, i.e. universities being underfunded provincially, student enrollment declining, no new research funds, no new researchers being trained to take the place of those leaving through death or retirement, it will be very difficult to meet a target of 2.5% of GNP spending by 1983.

My party would have to get together with the provinces to take a hard look at the Fiscal Arrangements Act to ensure that its R & D goals and provincial spending on education do not conflict. In order to meet the goal of 2.5% GNP spending by 1983, the federal government must be committed to ensure that sufficient people are trained and the way to do this is to make satisfactory arrangement with the provinces to achieve this aim.

8. Yes, the NDP party supports a Freedom of Information Law with binding appeal mechanisms through the Courts, unlike the Liberals who believe that it is the government which should make the final decision.

9. Yes, subject always to the right to "privacy" by an individual.

10. Yes.

SOCIAL CREDIT PARTY

(The following answers were received from Mr. Fabien Roy, M.P. for Beauce and Leader of the Social Credit Party of Canada).

1. The members of the Social Credit Party of Canada believe that the target of 2.5% of the G.N.P. by 1985 proposed by the Special Committee of the Senate on Science Policy formed in 1970 is still a realistic one. Moreover, we believe that the Canadian level of investment in research and development should never drop below 2.0% of the G.N.P. at any time. After 1985, the per cent of G.N.P. spent on R & D should be re-evaluated every 3 years.

2. The Social Credit Party of Canada has always been proposing an economic reform having, as a necessary premise the rational development of human as well as material resources of our Country. It is also a matter of fact that this reform is based on the redistribution of goods directly to the citizen in accordance with the fluctuations of the G.N.P. It is thus obvious that research and

development is a very important cornerstone of our party's economic strategy for the 1980's and thereafter.

3. A long-term funding policy for the different Councils is not any more an intention but a *fact* for the members of the Social Credit Party of Canada. Indeed, on the 18-19th of March, 1978, the members of the Social Credit Party of Canada met at the National Council meeting in Winnipeg, and unanimously passed the following measures: "That a Government of the Social Credit Party of Canada undertakes to reinvigorate research in Canada, by establishing a scientific policy in accordance with the following 3 fundamental principles: (a) the need for an adequate budget with the increase in research and development expenditures at 2.5% of the G.N.P. by 1985, of which 50% will come from the private sector and 50% from the public sector; (b) the urgency of establishing a long term Canadian scientific policy (3 to 9 years) supported by budget engagements of 3 years revised annually, and also longer projections of less precise nature, as stabilization measures; (c) the presence of representatives chosen by the scientific community on government organizations and committees, disposing of budgets, determining priorities, and consulted while realization of long term policies and also for the establishment of future projections once these policies are established."

Long-term funding projections is thus a measure which is fully integrated into our Party's electoral program. We believe that such long-term policy is imperative. First because the training of personnel and the purchasing of scientific material must involve long-term planning, and second because of the requested time and the large amount of capital invested in research projects. Also, this will have the effect of protecting our research potential from incompetent bureaucrats and from narrow-minded politicians.

4. We don't agree with this evaluation for the simple reason that what is required is an exhaustive re-evaluation of our national needs and objectives, which takes into account the interdependence of all aspects of our economy, rather than another sporadic and arbitrary relocation of money from the universities to the private sector. Isn't the research done in the forest, in the food production and in other areas by governmental laboratories as necessary to the economy as the research in the private sector. In the very important field of energy, since 1974, there have been complaints from the government about our exclusive reliance upon the oil industry companies: isn't this a good occasion to use government and universities researchers for starting selective projects? Among realistics measures to stimulate industrial R & D in Canada are: (1) urgent priority given by the government to a thorough review of possible tax incentive policies, direct grants and contracts schemes; (2) rationalization to create economies of scale equivalent to those of our competitors; (3) modification of our procurement policy so that the multinationals will be advised that R & D will be an important factor in Ottawa's decisions from whom to buy goods and services; (4) use the Foreign Investment Review Agency servicing to assist in fostering collaboration between the foreign investor and Canadian scientists in the public and private sector. Commitments should be sought from foreign investors and companies to employ Canadian technology-intensive services and to have R & D performed in Canadian industry or contracted out to universities.

5. I think that the best way to transfer technology from universities to the industrial sector is through industrial contracts for the universities. Universities already having attained advanced technology in a certain category are best qualified to apply the knowledge obtained to the problems found in the industrial sector. On the other hand, Federal Procurement Policy should be aimed at capitalizing on the inventions made in our universities and since greater incentives are needed by universities to pursue commercialization of their work, federal agencies should be encouraged to allow universities to retain possession and control of their federally funded discoveries. Universities in turn, would be encouraged to licence their discoveries to private industry. For the public sector, the federal government should allow projective research in the form of contracts to the universities and conserve only biomedical research.

6. National priorities can be clearly defined in the sectors where the research can be done, but we are not convinced that we have to establish a policy for basic and applied research respectively. This categorization in research makes sense only to bureaucrats. I think that scientific research yields fruits which must ripen for a long time before being harvested. A more likely problem is to determine where in the perspective of a long-term science policy. This is in itself a national priority, much more than trying to split hairs where they don't have to.

7. Since the Social Credit Party of Canada favours high

national standards of excellence in research, health care and education, we will sustain public sector research as well as post-secondary education programs and increase this support in accordance to the reforms and measures already mentioned.

8. Yes.

9. No. The Social Credit Party principle is that the privacy of the individual should be respected and upheld to the maximum degree. There is a possibility of some abuse of this privacy if researchers have access as suggested in question 9 to government documents concerning individuals. If, however, the individuals concerned had also to provide their authorization before researchers could be allowed access to such documents, then we would drop our objection.

10. Yes.

PROGRESSIVE CONSERVATIVE PARTY

(The following answers were received from the Hon. Howard Graffley, M.P. for Missisquoi and Minister of State for Science and Technology).

1. On October 8, 1979, I was honoured to be named Minister of State for Science and Technology, as this sole portfolio responsibility clearly reflects the high priority that Prime Minister Joe Clark attaches to the role of Science and Technology in Canada. However, as soon as I had assumed my full-time ministerial commitment to that new portfolio, I was frankly shocked to discover the extent to which the previous Government had allowed Canada's Research and Development effort, including our support of university research, to deteriorate.

When the former Prime Minister assumed power in 1968, Canada's Gross Research and Development Expenditures (GERD) constituted 1.2% of our G.N.P. (according to the OECD). By 1978, after ten years of mismanagement, our nation's R & D expenditures had fallen to a shockingly low GERD/GNP ratio of 0.9%. This R & D effort is particularly poor in relationship to that of other industrialized nations. (The USA in 1977 had a GERD/GNP ratio of 2.4%). Following the election of the Progressive Conservative government, concrete decisions were made to increase the level of R & D in Canada. Recognizing the critical erosion that had occurred in this area, the Progressive Conservative caucus determined that one of our priorities for the 1980's would be to work towards an R & D goal of 2.5% of G.N.P. and it is our intention to make steady and continuous progress towards this target throughout the decade. The Progressive Conservative government had taken the first steps to ensure this target would be met, when, as you know, the election was forced upon us.

2. As I have indicated above, research and development have a very high priority in my party's economic strategy. In November, 1979 I spoke to the Chemical Institute of Canada and outlined the major themes on which the government intended to structure its economic strategy. They were:

- the establishment of an economic partnership among governments, provinces and labour;
- increasing productivity, fostering innovation and increasing productive investment in our economy;
- the development of our transportation, energy and other infrastructure systems;
- the effective utilization of our human resources;
- the building of provincial and regional economies on the basis of their respective strengths;

• greater reliance on the private sector.

It is clear that R & D falls mainly under the second theme, that it is not being treated in isolation from the broader economic and social concerns of the country and that it is central to the government's economic development strategy. Our ability to raise the level of expenditures on R & D will depend in large measure on the success of that strategy; it is no less true that the success of the strategy depends on doing more R & D.

3. Yes. It is our intention to implement five-year funding. The need for long-term funding for the three Granting Councils, (the Medical Research Council, the Social Sciences and Humanities Research Council and the Natural Sciences and Engineering Research Council) has long been recognized by the Progressive Conservative Party. You may recall that the government took the first step toward implementing five-year funding for the Councils when it announced a dramatic increase in 1980-81 funding for NSERC. That announcement marked the first step towards financing the NSERC five-year plan. At that

time I said that the funding levels for the remaining four years would be announced within a few months. When re-elected we intend to follow through on this commitment. I am pleased to announce here that with additional monies to cover inflation, there is now a total increase of \$42 million for NSERC, which is a 35% budgetary increase for Canadian university research in the natural sciences and engineering fields.

4. Yes. The major increase in R & D capacity must come from the industrial sector. We have numerous studies that indicate that the economic performance of the more R & D intensive industries is markedly better than the performance of the less R & D intensive ones. We, as a nation, spend less on R & D than most countries with which we are competing at home and abroad. The shortfall, compared to what is done in other countries, is greater in the industrial than in the government or university sectors. Unless we correct this weakness, it will become much more difficult to put more Canadians to work in productive and interesting work, to reduce and correct our balance of payments deficit and to attain the other major economic objectives which we have set for ourselves.

The aim of policy therefore must be to secure a much higher rate of increase in R & D expenditures in and by industry than in and by government and universities. Industrial R & D is almost by definition responsive to market forces as indeed it must be if it is to produce the results expected of it. It follows that government which can do much to create a climate favourable to R & D should, in its choice of policy instruments, adopt whenever possible those which improve or supplement, not supplant, the operations of the market place.

Consistent with this approach to increase R & D levels in the industrial sector are the grant programmes designed to assist in the financing of innovative projects originating with and proposed by the private sector, such as the Enterprise Development Programme. These programmes are particularly useful to medium and small size firms which often do not have an income against which to claim a tax incentive or which are unable to assume the substantially higher risks usually associated with innovation.

Historically, small and medium size firms have played an important role in originating innovations. The available evidence suggests that it has become more difficult for these firms to raise capital. Perhaps the most startling piece of evidence comes from a study by the U.S. Small Business Administration which shows that in 1969 public offerings by companies having a net worth of \$5 million or less numbered 548 and raised \$1.5 billion; in 1975, they numbered 4 and raised only \$16 million. There is reason to believe that similar problems are experienced in Canada.

These issues must be resolved because without a sufficient flow of venture capital much of the R & D which we finance will be on sterile ground. The Progressive Conservative Party is addressing these issues in the context of our determination to make it easier to build a stake in this country and to help small and medium size business.

5. "Technology transfer" among industry, the universities and government was an issue I addressed at the time I announced the 1980-81 NSERC funding. In the longer run, the continued vitality of industrial R & D and innovation depends on a healthy capacity to undertake non-mission oriented or fundamental research. In Canada, the responsibility for such research has, as a matter of long-standing national policy, rested almost exclusively with the universities. This has tended to isolate university research from other performers and a national policy on R & D will have to address the interface problem that this has posed.

Let me reiterate, the Progressive Conservative Party when re-elected will continue its commitment to increase R & D expenditures. This commitment is not an isolated one. It is at the core of the government's economic development strategy.

Insofar as industry is concerned, this means that R & D policy should essentially reinforce and work with the market forces, aim at increasing employment, stimulating growth and improving our competitive position. As for universities, it means that the vitality of fundamental research must be maintained, but with greater regard than in the past to its interface with industry and for Canadian opportunities and problems. In the case of the federal government, it means a re-examination of the needs which will be met through its R & D programmes and a greater responsiveness to those needs.

6. In relation to your question on the respective roles of "basic" and "applied" research, both are of vital importance. The government has identified three main thrusts for federal support of university research: the support of fundamental (i.e. non-mission-oriented) research, the support for the training of research manpower and the support of concerted research in areas

of national concern. The first two thrusts are well established; the third is not.

The need for new knowledge can only be fully met by investment in university research. It is in the universities that our capacity to undertake basic research has been developed and is located. They, as a consequence, are at the very core of the Canadian science effort. There are convincing arguments that a proportion of research must be unconstrained so as to provide for the unexpected breakthroughs and for the response to new priorities and problems as they arise. But much of the basic science can be done and brought to fruition within the context of research in areas of national concern. The universities have a role in this regard as well as in the performance of fundamental research.

The ability of universities to fulfill their role in research has in recent years been eroded through lack of adequate funding and through inflation.

The Ministry of State for Science and Technology recently released two background papers which assisted the government in its review of funding for the Granting Councils. These papers deal with the major issues facing our universities in carrying our research and with a rationale for the involvement of the federal government in university research.

Simultaneously, the NSERC five-year plan was released. The plan had five main themes:

- the training of highly qualified manpower required to move towards the 2.5 per cent of GNP target for national R & D expenditures;
- improving the interface between university research and industrial R & D;
- the support of fundamental research;
- the support of targeted research (concerted research programs in areas of national concern);
- renewing the equipment base, much of which is old or obsolete.

The government viewed very favourably the NSERC proposed plan which it felt responded well to the needs of the country. As pointed out in the MOEST background papers, university research, particularly in the natural sciences and engineering, has been eroded in the 1970's due to a decline in the real value of federal support, declining enrollment and a low turn-over of university staff. In its main themes, the plan addressed these problems and also set new directions for university research by relating it to areas of national importance and concern. These included energy, food and agriculture, communications, toxicology and the oceans.

The increase for 1980-81 which I announced in November will enable NSERC, in cooperation with the universities and the provinces, to improve the university research environment and to expand its programs for training new researchers, for concerted research, for stimulating more interaction between the universities and industry, for fundamental research and for renewing outdated equipment. A major boost, in short, to allow the Council to do the job it was set up to do.

7. As you will note from the answers to your earlier questions, the need to ensure that Canada has a sufficient supply of scientific manpower to meet the challenges of the 1980's is one which the government addressed in announcing improved funding for NSERC. University research is the principal means of training research manpower required in other sectors of the economy. In the process of increasing the national R & D effort over the coming years, the need for researchers, research managers, technologists and craftsmen will be as significant as the need for increased expenditures. The ability of universities to fulfill their role in research has in recent years been eroded through lack of adequate funding and through inflation.

NSERC's five-year plan, however, did take into account, in a major way, the impact which the government's target for R & D expenditures has on manpower requirements and the need to improve the interface between universities and business. It proposed a large expansion in its skilled manpower programs and a significant part of its awards would be tenable in industry.

In closing, I would like to emphasize my party's commitment in the areas of increasing Canada's level of expenditures on R & D and, integral to that commitment, our determination to provide substantial increased funding in those areas, such as NSERC, where the direct impact of funding will dramatically improve our national science and technology capacity, thus contributing to an improvement to our national research and development level. An increased level of R & D will, in turn, enhance our ability to provide a sound economic policy for Canada in the 1980's. Helping Canada meet that goal remains a top priority of the Progressive Conservative Party.

8. Yes, the Progressive Conservative Party has consistently given top priority during the last three federal

election campaigns to a Freedom of Information Law. As a result of that election commitment, one of the first major pieces of legislation introduced by the new Progressive Conservative government was Bill C-15 which enshrined the principle of freedom of information, providing the public with access concerning government business and removing the aura of administrative secrecy which has surrounded previous governments. Included in that progressive Freedom of Information Legislation was a binding appeal mechanism wherein the public in cases where the government refused to disclose information could appeal that decision through: a) an Information Commissioner with ombudsmanlike authority; b) or failing that avenue, to a Federal Court. The effect would be that the courts, not the federal government, would have the final say on disclosure of government information. While that important new piece of legislation like so many others, died on the Order Paper with the dissolution of Parliament, the Progressive Conservative Government is committed to its re-introduction when re-elected, so that Canadians are assured of open and accountable government.

9. The Progressive Conservative Government's Freedom of Information Legislation does not deal with the area of access to personal information within government by third parties. The Progressive Conservative Government, however, was committed to introducing a new Privacy Act. This new legislation, which was before Cabinet when the Government was brought down, included provisions to enable bona fide researchers access to personal information for their research and statistical needs.

10. Yes, the Progressive Conservative Party not only favours consultation and continuing dialogue with interested non-governmental organizations and individuals, but has been actively following such a course since its election last May. The new Progressive Conservative government welcomes all outside suggestions and opinions on federal programmes and policies. As a normal procedure, non-governmental organizations usually present annual briefs to the government. All such submissions are highly valued and carefully reviewed by our government, and frequently lead to improvements in proposed or existing legislation.

THE LIBERAL PARTY OF CANADA

(The following answers were received from Mrs. Audrey Gill of the Liberal Research Bureau.)

Unfortunately, the deadline for publication of the Bulletin occurred before release of the Liberal Party platform. It was, therefore, not possible to answer the questions as phrased, but the previous Liberal government took a number of measures and initiatives to strengthen and encourage research and development in Canada which we would like to point out to your readers.

— A new national priority: The Liberal government established a new national priority in R & D so as to aim for an expenditure target for R & D of 1.5% of GNP by 1983.

Tax measures: the three latest budgets introduced tax measures that encouraged greater private sector investment in research and development by both small and large firms. These incentives were additional to the existing 100% write-off for R & D expenditures already provided for in the Tax Act and direct federal support of industrial R & D.

Government-industry cooperation: the Liberal government opened federal laboratories to the private sector so as to encourage greater technology transfer between government and business.

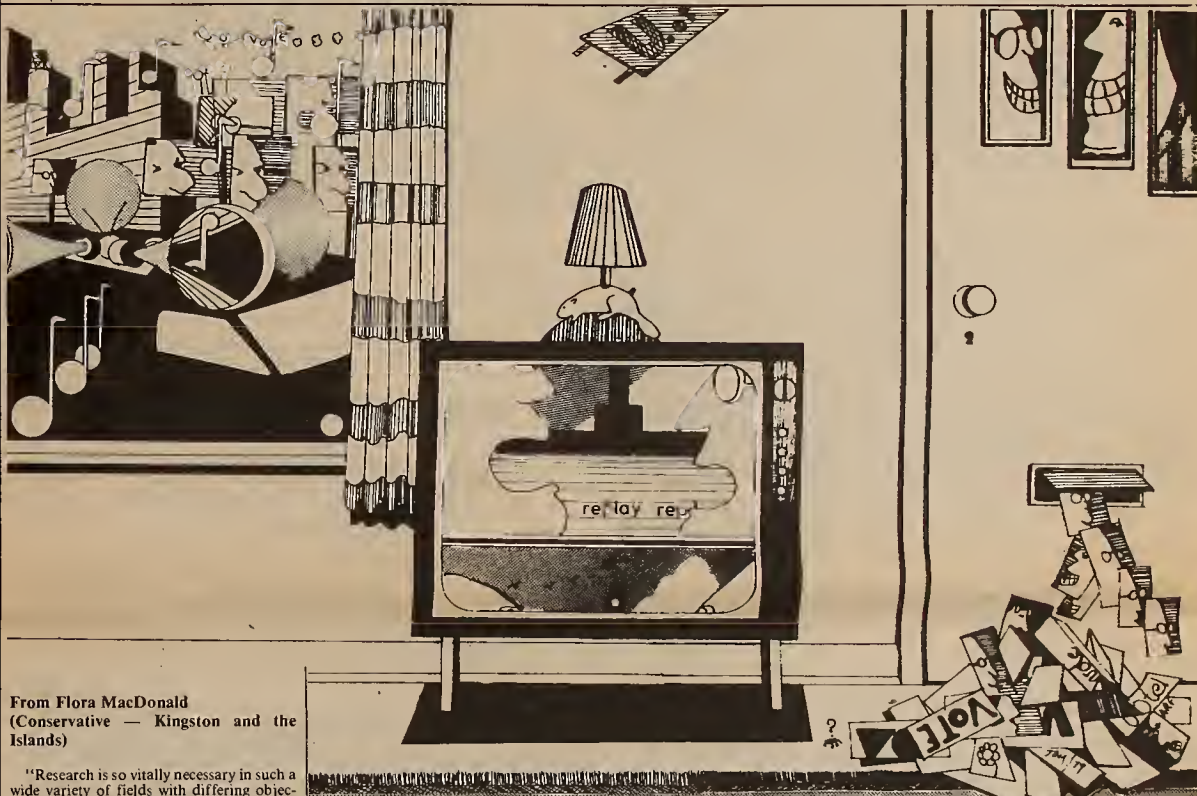
Contracting-Out Program: the Liberals introduced this programme in 1972 whereby the federal government's science needs were contracted out to private industry where possible.

Use of buying power: in June 1978 the Liberal government announced that it would use the federal buying power to spur growth of Canadian industrial technology capabilities. Included in this measure was the Product Development Fund whereby companies would be assisted in entering new fields and producing goods not currently manufactured in Canada — in particular high technology industries.

Re-organization of federal grant programmes: federal grant programmes for product innovation were reorganized into a new Enterprise Development Program with an emphasis on the needs of smaller firms.

On the record

Quotes from candidates in response to CAUT lobbying in May 1979.



From Flora MacDonald
(Conservative — Kingston and the Islands)

"Research is so vitally necessary in such a wide variety of fields with differing objectives, i.e. medicine, agriculture, energy, offshore resources, environment, the better understanding of cultures, both our own and others, that it is impossible to state categorically the ratio of applied as compared with basic research proposals that should be supported in each field. Applied research should largely be oriented to Canada's economic prospects. Basic research must necessarily be more open-ended. Research applications must not be the sole responsibility of bureaucrats to decide upon, but must be the shared responsibility of those working in the field and those accountable to the public for all public expenditure."

On federal provincial agreements on postsecondary funding:

"...Our aim would therefore be to make the fiscal arrangements more equitable. We also suggested at the time (1977) that unimpeded mobility between provinces for students seeking post-secondary education should be a condition of EPF payments."

On foreign students:

"For many years, particularly in the field of graduate studies, when Canadian universities could offer only limited opportunities, we turned to resources offered in the United Kingdom, the United States, France and other countries to provide our students with graduate training, the benefits of which were utilized in Canada. Canada, now that

it is now in a position to do so, should extend the same privilege to foreign students. Financial assistance in such circumstances from the federal government should be limited to graduate students and their numbers should be regulated by the capacity of the university to enrol them. Such financial assistance might well come under the aegis of CIDA.

Foreign graduate students should be granted work permits during their study years in Canada."

From Jean Luc Pepin
(Liberal — Ottawa-Carleton)

"Research and development is a key element in the unfolding broad strategy aimed at invigorating the overall performance of the economy... We need more R&D in Canada. Science and technology have played an essential part in Canada's development and are likely to influence our future in an even more dramatic way. Our investment in research to date has given the country a well educated work force and a strong tradition of enquiry and sound institutions on which we can build.

Our national well-being and economic health will be dependent to an increasing degree on our ability to apply this knowledge in industry. The R&D level in Canada is lower than many industrialized countries. The government should imple-

ment (and is doing so) programs to increase R&D, particularly industrial R&D to encourage industry to use the results of research conducted by universities and government scientists.

The Liberal party has a goal to help Canadians to reach a target of 1.5% of GDP for R&D by 1983. Canada will need to boost its present effort by 50%."

From Stanley Knowles
(NDP — Winnipeg North Centre)

From the report of the CAUT canvasser: Stanley Knowles believes that R&D funding should be raised at least to levels equivalent to those in Western Europe, and that there should be an increased stress on basic research. In the areas of health and postsecondary education, he states that Ottawa should re-establish control to assure that funds transferred to the provinces for these purposes are so used. He regards university education as a social investment and argues that a high percentage of the cost should be borne by the state. He also

said that in times of enrollment-slumps funding should remain adequate to ensure continuous support to programmes.

He supports greater freedom of information; he advocates equal opportunity and affirmative action programmes to redress inequities experienced by women; he favours a flexible retirement age policy.

From the October 1978 by-election in Ottawa - Centre

Robert De Cotret (Conservative)

"...Canada is lagging behind in technological innovation. In 1965 spending on R&D was .8% of the value of manufactured output. More than a decade later it is down to .58%. Our aim is a target of 2.5% of GNP for R&D."

Graphic—Tom McDonald

BARGAINING TALK NÉGOCIATIONS

by Ted Bartley (CAUT Collective Bargaining Officer)

January of 1980 saw a new addition to the growing list of CAUT publications. TABLE TALK will be a regular monthly newsletter dealing with collective bargaining topics. While this column, BARGAINING TALK, will continue, it is hoped that TABLE TALK will provide the format for a more detailed analysis of the many important issues facing CAUT affiliates who are engaged in either certified or special plan collective bargaining. As is done with FACTS AND FIGURES, the CAUT update on economic benefits, TABLE TALK will be sent to local and provincial associations, as well as to the chairpersons of all negotiating teams. Ms. Susan Feldman, CAUT Collective Bargaining Officer, will serve as editor of the new newsletter, and any comments as to its substance or format should be forwarded to her at the Ottawa office.

As was mentioned in BARGAINING TALK on a couple of occasions in 1979, negotiations at UBC for revisions to one of the key "Special Plan" documents, the Agreement on Conditions of Appointment, have been quite protracted. They commenced during the spring of 1978 and broke off without agreement in October of 1979. At last report, the University had taken the position that certain of the faculty association's proposals were essentially concerned with university governance and hence not negotiable under the Special Plan arrangement. The parties thus agreed to suspend negotiations pending an arbitration board ruling on this issue. This arbitration hearing, which is scheduled for this Spring, will be of great consequence to the UBC Faculty Association. Indeed, it may not be an exaggeration to state that the validity of Special Plan bargaining at UBC is at stake. If the administration's interpretation of "governance" were to prevail, there could be little left to bargain under the UBC Special Plan in the area of conditions of appointment.

After a December 11th hearing before the Ontario Labour Relations Board, the Association of Teaching Staff (ATS) at TRENT was granted an interim certificate dated December 18, 1979. The bargaining unit includes all full-time faculty and professional librarians, as well as department chairmen. The certificate was issued on an interim basis however since the position of College Head (five individuals) remains in dispute. A Labour Board Examiner has been appointed to inquire into this matter.

Planning is already underway for the Third Annual CAUT NATIONAL BARGAINING CONFERENCE, which is tentatively scheduled for September of 1980. We are most interested in your views concerning workshop and general discussion topics. Suggestions should be forwarded to the attention of Dr. Ron Levesque, CAUT Collective Bargaining Officer, at the Ottawa office.

Call for
Applications to Canadian Studies
Program at

HEBREW UNIVERSITY

Applications are invited for appointment in the Social Sciences, the Humanities and Law for the Canadian Studies Program at the Hebrew University of Jerusalem for the Spring trimester (end of April through June) 1981.

The Program of Canadian Studies at the Hebrew University of Jerusalem was established by the Government of Canada and Dr. Ralph Halbert, National President of the Canadian Friends of the Hebrew University, and Mrs. Halbert in April 1978.

The successful candidate will be expected to teach one course (to be determined in consultation with the department/school to which the scholar will be attached) and to participate in faculty and public seminars at the Hebrew University. Remuneration will include return travel costs for the candidate to Israel, salary for one trimester at the level of full professor at the Hebrew University and other benefits accruing to the position.

Additional information and application forms can be obtained by writing to:

Hebrew University Canadian Studies Program,
Canada-Israel Foundation for Academic Exchanges,
170 Metcalfe St., Suite 407,
Ottawa, Ontario. K2P 1P3.

Deadline for completed applications: March 1, 1980.
Notification of successful candidate: June 30, 1980.

NOW AVAILABLE

DIRECTORY OF ACADEMIC AND ADMINISTRATIVE OFFICERS 1979

The directory provides the names, titles and telephone numbers of senior university administrators, deans and department chairmen, and of the senior officers of national, regional and provincial associations of universities. This directory is a must for all university faculty and administrators, and for government officials and individuals who have regular dealings with Canadian universities. The publication is available at \$4 per copy. When ordering, quote publication no. 364.

Address cheque or money order to AUCC publications, 151 Slater St., Ottawa, Canada K1P 5N1.

MAINTENANT DISPONIBLE

REPERTOIRE DES DIRIGEANTS ET ADMINISTRATEURS DES UNIVERSITES CANADIENNES, 1979

Le répertoire renferme les noms, titres et numéros de téléphone des cadres supérieurs des universités, des doyens et des directeurs de département, ainsi que des dirigeants des associations nationales, régionales et provinciales d'universités. Ce répertoire est indispensable à tous les professeurs et administrateurs d'universités, de même qu'aux fonctionnaires supérieurs des gouvernements et aux particuliers qui ont régulièrement affaire aux universités canadiennes. La publication se vend \$4 l'exemplaire et porte le numéro 364 qu'il faut indiquer en adressant une commande.

EGALEMENT DISPONIBLE

REPERTOIRE DES UNIVERSITES CANADIENNES 22^e EDITION, 1979

Le répertoire est un guide détaillé de l'enseignement supérieur au Canada. Soixante-neuf chapitres traitant chacun d'une université en particulier contiennent des renseignements sur des aspects divers, depuis les conditions d'admission jusqu'aux installations de recherche. Il s'y trouve également une liste de tous les programmes offerts par les universités canadiennes en vue d'un diplôme, d'un certificat ou d'un grade. Le répertoire, ouvrage bilingue de 400 pages, se vend \$7 l'exemplaire; il porte le numéro 365 qu'il faut indiquer en adressant une commande.

Les chèques ou mandats-poste doivent être adressés aux Publications de l'AUCC, 151, rue Slater, Ottawa, Canada K1P 5N1.

ALSO AVAILABLE

DIRECTORY OF CANADIAN UNIVERSITIES

22nd edition 1979

The directory is a comprehensive guide to higher education in Canada. Sixty-nine individual university chapters provide information ranging from admission requirements to research facilities. A listing of all diploma, degree and certificate programs offered by Canadian universities is also provided. The directory, a 400 page bilingual publication, costs \$7 per copy. When ordering, quote publication no: 365.

Address cheque or money order to AUCC publications, 151 Slater Street, Ottawa, Canada K1P 5N1

CAUT Board votes to recommend censure of Nipissing

by Helen Baxter

A vote to recommend to the CAUT Council the censure of the President and Board of Governors of Nipissing University College has been passed by the Board of Directors of the Canadian Association of University Teachers.

The vote was taken at the Board of Directors' meeting in Ottawa on November 10 and will be presented to the CAUT Council at its annual meeting in May. The Board acted on the recommendation of the CAUT Academic Freedom and Tenure Committee.

The censure motion results from the handling of the termination of the probationary appointment of Professor Patricia Hughes who was with the Political Science Department at Nipissing in North Bay, an affiliated college of Laurentian University.

Dr. Hughes was denied tenure by the Board of Governors despite a high academic performance and several favourable evaluations. Her probationary appointment was subsequently terminated for budgetary reasons by the Board of Governors by procedures which did not accord with CAUT guidelines.

Dr. Hughes appealed to the CAUT for assistance and in March, 1979 the AF and T Committee appointed a committee of inquiry to investigate the case. The committee was composed of Professor Ted Alexander (Law, Toronto), Professor Margaret Eichler (Sociology, OISE) and Professor Donald Rowat (Political Science, Carleton) who acted as Chairman.

In its report, the committee concluded that Dr. Hughes warranted the award of tenure in view of the fact that her academic performance was consistently rated highly. It also concluded that the reasons Dr. Hughes was denied tenure were financial but that there was no objective determination of the existence of a financial crisis sufficiently serious to warrant the termination of her appointment.

The Chairman of the Academic Freedom and Tenure Committee, Professor Jim

Foulkes, said the CAUT would continue to make every effort before the May Council meeting to persuade the President and Board of Governors of Nipissing to enter into negotiations with the Association over the case of Professor Hughes. He expressed the hope that the CAUT "may meet with a favourable response to the continued overtures on our part."

In other AF and T matters, the CAUT Board decided to postpone the second stage of censure both at the University of Calgary and at Memorial University pending further correspondence. The President and Board of Regents of Memorial and the President and Board of Governors of Calgary were placed under the first stage of censure at the CAUT Council meeting in May this year.

In other matters before the Board:

- The Board approved the addition of clauses in the terms of reference of the Academic Freedom and Tenure Committee and the Collective Bargaining Committee charging the committees with the responsibility to consider the concerns of women staff in all policy recommendations and to address the effects of discrimination against women and prevent such discrimination in future.

In a related matter, Professor Louise Forsyth of the University of Western Ontario announced that she intends to place before the Board at its next meeting a motion to recreate the Status of women Committee.

- The Board approved the appointment of Professor J. A. S. Evans of the Department of Classics at the University of British Columbia as editor of the CAUT monograph series.

- The Board accepted the resignation of Professor Martin Kilmer from the Board and appointed Professor David Bates as his replacement for the remainder of his term. Professor Bates is with the Department of Education at Lakehead University and is the Chairman of OCUFA's Board of Directors.

CAUT moves to second stage of Memorial censure- accredited status of social work program threatened

by Victor Sim

The Canadian Association of University Teachers has imposed the second stage of censure on the President and Board of Regents of Memorial University of Newfoundland. Under this stage information about the censure will be made more widely available than under the first stage. The censure will be advertised in the journals and bulletins of faculty organizations in the United States, the United Kingdom and other Commonwealth countries, Germany and France as well as in scholarly and other publications in which the University is likely to advertise academic vacancies.

In addition to the moral condemnation implicit in a censure, the increased publicity is intended to advise prospective faculty members that conditions for the full protection of academic freedom do not exist at Memorial and to suggest that they make themselves familiar with those conditions before accepting appointment.

Censure at the third stage, in which faculty members are advised not to accept appointments at the censored institution, may be imposed by the CAUT Council after a further period if no movement has been made toward a resolution of the issues which led to censure.

The decision to move to the second stage of censure was taken by the Academic Freedom and Tenure Committee acting on the authority given to it by the CAUT Council in May, 1979. It was taken because discussions with the University administration have not resulted in correction of the abuse of academic freedom which led to the censure. It had been hoped that meetings and correspondence between University administrators on the one hand and representatives of the Memorial University Faculty Association and CAUT on the other during the autumn would result in sufficient pro-

gress to warrant withholding the action which has now been taken.

The decision to place the University administration under censure was taken by the CAUT Council in May, 1979, following the University decision not to renew the appointment of Professor Marlene Webber in the School of Social Work because of her professed Marxist-Leninist views and her alleged use of the classroom to disseminate these political views.

The action of the CAUT Council was based on the findings of a committee of inquiry chaired by Professor Brough McPherson, a distinguished faculty member at the University of Toronto. The committee found that the charges against Professor Webber were unsubstantiated, that she had in fact alerted students to her political beliefs, and had made a serious effort to present a balanced political perspective. The committee concluded that her activities and actions were not unprofessional.

The President and Board of Regents refused to submit the case to third party arbitration despite urgent representations by the Memorial University Faculty Association and CAUT. The censure followed.

The Board of Accreditation of the Canadian Association of Schools of Social Work gave implicit support to the CAUT censure in November 1979 when it gave notice that the accreditation of the Bachelor of Social Work program at Memorial will be withdrawn unless the Board is satisfied that the policy of the School and the University with respect to discrimination on grounds of political belief has been changed.

The Board of Accreditation judged that the actions of the School and the University in the case of Professor Webber would be sufficient under the present accreditation guidelines to withdraw the accredited status of the program. The guidelines were amended at the annual General Assembly of CASSW in June, 1979 to prohibit discrimination on grounds of political belief.

In order to retain the accredited status of its Bachelor of Social Work program the University must satisfy the Board that the policies of the School and the University ensure political freedom in accordance with CASSW guidelines. Loss of accredited status would mean that the School and its programs would not have the professional, academic and ethical endorsement of CASSW.

At the same annual meeting CASSW expressed its grave concern that the President and Board of Regents had been censured by CAUT over the Webber case and instructed CASSW President Professor Harvey Stalwick to take all necessary steps to persuade University President Moses Morgan to submit the case to third party arbitration "so that any ambiguities with respect to this case will be fully and finally resolved."

Dr. N. A. S. Evans is Chairman of the CAUT and is in charge of Academic Freedom and Tenure matters.

People



"An election, plus the Quebec referendum, that should help cure the winter blahs!"

Reprinted from the OTTAWA CITIZEN

Mandatory retirement at 65 should be abolished, a special Senate committee says, because it often amounts to sentencing people to poverty.

The senators' report, released yesterday with the title Retirement Without Tears, also urges an increase in Government pension cheques to about \$450 a month from the present maximum of \$218.06 — and that this be made possible by doubling employee and employer contributions to the Canada or Quebec pension plans.

And the increased pension should be split 50-50 between husbands and wives, even if one of them was not listed as a contributor to the plan, the report says. This would provide an adequate pension for millions of women who have not been part of the workforce.

(The committee cited 1977 statistics showing that 48 per cent of unattached women over 65 have annual incomes of \$3,000 or less, and said the number of elderly women subsisting on incomes below the poverty line is growing.)

After almost two years of public hearings and study, the 22 senators concluded that forcing people to drop out of the workforce at 65 is discriminatory and ignores their desires and abilities.

Retirement can account for as much as a third of a person's adult life, and "what a terrible thing it is if this period is spent in poverty, aimlessness and loneliness when there are such rich opportunities for companionship or leisure or work."

Based on 1976 averages, men can expect to live to 79 and women to 83.

Working adults should neither be forced out of their jobs at 65 nor forced to keep working if they want to retire early, the committee said. Individuals should be able to choose when they want to retire, subject to common-sense rules about competence and physical fitness.

It proposed that pension plans and retirement rules be amended to increase the

Double pensions, let old keep working, senators urge

age of mandatory retirement by one year at a time for five years, after which the concept of mandatory retirement at any age should be abandoned.

The committee also concluded that rather than improving what it described as an inadequate system of private pensions, the Canada-Quebec pension plan should be the prime vehicle for reforming the Canadian pension system.

Under the existing formula, employees and employers each contribute 1.8 per cent of eligible earnings for a total of 3.6 per cent. The committee recommended that each contribute 4 per cent to achieve a new total of 8 per cent, introduced gradually over two years.

The increases in benefits would be introduced over a five-year period starting from the end of the year that the 8 per cent level of contributions is in effect.

Senator David Croll, 79, known as a vigorous campaigner against mandatory retirement, headed the special committee. It received 59 briefs from groups ranging from students, labor and business groups to pension, teacher and medical organizations.

The report was to have been tabled on Monday in the Commons. Defeat of the Government and dissolution last week made that impossible, but Senator Croll (L., Ontario) received permission from Senate leaders to make it public anyway.

The committee stressed that implementation of its recommendation does

not involve a raid on the public purse, and the extra costs to employers and employees should be manageable.

For employees earning \$10,000 a year, the committee's recommendation involves an additional contribution to the Government plan of \$220 a year. That "should not be intolerable" for either employer or employee, especially in view of the fact that contributions are tax-deductible.

If employers and employees do not now assume the cost of an expanded public pension system, society will eventually have to assume those costs through increased taxes to bolster the pension system or pay welfare benefits, the report says.

"The aging population, with its increasing political power, will not tolerate indefinitely a life of poverty in retirement."

As for women pensioners, if contributions to the plan were increased as the committee recommended and the 50-50 split introduced, between five million and six million women should receive reasonably adequate pensions, the report says.

In 1979, the average income of women from the Canada-Quebec pension plan was \$1,013 a year. The amount is small because women generally earn less than men or work part-time for low pay and do not qualify for participation in the plan. (Since 1978, a person has had to earn \$1,100 a year to enter the plan.)

The report played down concerns expressed by some Canadians that the cost

of supporting a growing elderly population will be an intolerable burden on the labour force. In 1978 there were 2.1 million over 65 in Canada. By 2001 there will be about 3.4 million, and as a result of the post-war baby boom the number could climb to six million or more in 50 years.

But the aging of Canada's population should not be cause for alarm because the size of the dependent group under 17 will be declining at the same time, the committee noted. Therefore, costs in such areas as education will be reduced substantially.

It predicted the economy will face adjustment problems, such as diverting money from education to pensions and health care for the elderly, but said the problem should reach serious dimensions only after the year 2006, giving Canada more than 25 years to take the necessary steps.

Other recommendations:
☐ A review of all human rights legislation should be undertaken to eliminate loopholes that permit age discrimination because of employee-benefit plans.

☐ Private pension schemes should be forced to provide adequately for widows or widowers.

☐ Employees should have the right to any contributions to a pension plan made by their employers on their behalf as well as their own contribution after one year, without regard to age. Federal and many provincial rules now say employees must work for the same employer for 10 years and be 45 before having the right to employer contributions.

☐ The benefits of mobile workers under private pension plans should be transferred to the Canada-Quebec plan.

☐ Seasonal workers should be covered under a special category of the Canada-Quebec plan.

☐ Employment opportunities should be improved for those 65 or older.

☐ Pre-retirement counselling should be easily available.

ACADIA UNIVERSITY School of Computer Science DIRECTOR

Applications are invited for the position of Director of the School of Computer Science at Acadia University. Applicants should have a doctorate in Computer Science or a closely related field and appreciable experience in the teaching of Computer Science at University level. The duties are to administer a School of eight professors and to participate in the teaching of courses at the Bachelor's and Master's levels.

The Directorship is a term appointment, the normal term being six years, and is renewable. The Director will also be appointed to either a Professorship or Associate Professorship in Computer Science, in the tenure stream. An appointment with immediate tenure is possible. The salary will be fully competitive.

It is hoped that the person appointed will be able to take up duties in the near future; however, a later starting date (up to July 1, 1980) will be acceptable to the University. Applications, which will continue to be considered until the post is filled, should include a curriculum vitae and the names of three referees, and be addressed to:

Dr. L. G. Jaeger
Vice-President (Academic)
Acadia University
Wolfville, Nova Scotia
B0P 1X0

CONCORDIA UNIVERSITY



COMPUTER SCIENCE POSITION

Applications are invited for the position of *Chairman* of the Computer Science Department at Concordia University. The department has over 20 faculty members and a number of system analysts. It offers programmes at both the undergraduate and graduate levels. At the undergraduate level it offers a Bachelor of Computer Science programme with options in General Science, Digital Systems, General Business and Mathematics and an Honours programme in Computer Science. There are over 625 undergraduate students, and 120 graduate students, full-time and part-time. The language of instruction is English. Interested candidates may send a curriculum vitae along with the names of three referees to

Prof. M.N.S. Swamy Dean of Engineering
Concordia University
1455 de Maisonneuve Blvd. West
Montreal, Quebec
Canada H3G 1M8

CAUT Refugee Foundation

The CAUT Refugee Foundation was created by the CAUT Board in August 1979 to facilitate assistance to refugees from Southeast Asia resettling in Canada. Trustees of the Fund are members of the CAUT Administration Committee.

The CAUT Refugee Foundation can assist in one of two ways:

1. Financial donations from individuals and local provincial faculty associations may be sent directly to the address below. Receipts for tax purposes will be issued. The money received will be applied at the discretion of the trustees of the Foundation to assist refugees admitted to Canada under the federal government refugee sponsoring programme.
2. Funds collected by local university sponsoring groups may be processed through the CAUT Refugee Foundation to become eligible for tax deductible status. All such funds will be returned to the local sponsoring group to be applied in the support of a refugee family.

Local and provincial faculty associations and individual members of CAUT are urged to consider sponsoring a refugee family in one of the ways outlined above:

For further information please write to:

The Executive Secretary
CAUT Refugee Foundation,
1001-75 Albert Street, Ottawa, Ontario, K1P 5E7



UNIVERSITY OF REGINA

invites applications and nominations for the position
of

Dean Faculty of Social Work

The Dean is the senior academic administrator for the Faculty of Social Work, which includes the School of Human Justice administered by an Associate Dean. The Bachelor of Social Work, Master of Social Work, and Bachelor of Human Justice degrees are offered.

The Social Work program consists of a generalist social work curriculum with emphasis on rural and remote areas and minority groups at the undergraduate level. The graduate program is centered on the field of policy and social administration. The Human Justice program is multidisciplinary with a broad human services educational approach to justice-related services.

The University of Regina has an undergraduate enrollment of approximately 4000 in the Faculties of Administration, Arts, Education, Engineering, Science, and Social Work. Masters and doctoral programs are offered in several disciplines through the Faculty of Graduate Studies and Research.

Nominations or applications, accompanied by a resume will be received until a selection is made and should be sent to:

Dr. C. W. Blachford, Dean
Faculty of Graduate Studies and Research
and Chairman
Search Committee, Dean of Social Work
University of Regina
Regina, Saskatchewan S4S 0A2

NOTES FROM WASHINGTON

by Clive Cookson

Colleges and military compete for students

College and university administrators have known for a long time that they will have to compete more fiercely for students as the 18-year-old population declines during the 1980s. But most have only recently become aware that the armed forces will need to suck in an increasing percentage of the same shrinking pool of young people, either as volunteers or, if necessary, as conscripts.

The military establishment is also beginning to appreciate the demographers' message and the "potential for conflict between the military and the colleges and universities," says Harry Marmion of the American Council on Education, who has written two books on military recruitment. By the late 1980s the four services (army, navy, air force and marines) will need to recruit at least 30 per cent — and according to some estimates as many as 50 per cent — of all fit and qualified young men, either for the reserves or for active duty.

Even last year, with the number of 18-year-olds at its peak, the forces failed to attract enough volunteers; 1979 was the first year since the draft was abolished in 1973 in which all four services missed their recruiting goals. The army had the biggest deficit; it fell 10 per cent short of its target of 158,000 new recruits.

Bills introduced to restore compulsory service

Since the recruiting problem first became apparent at the end of last year, several bills have been introduced in Congress to restore compulsory national service in some form. The most modest proposals would merely reintroduce registration of young men (and in some cases women) of military age — in other words prepare for conscription without actually bringing it back until the manpower shortage becomes more severe.

Others want to go further. Senator John Stennis, the 78-year-old chairman of the Senate Armed Services Committee, has spoken in favour of a 15- or 18-month period of compulsory military service. It would have to be a "fair and equitable" system, he said, with all 18-year-olds liable for selection and without the elaborate system of deferments and exemptions that made the draft so unfair during the Vietnam War.

In the House of Representatives Rep. Paul McCloskey is proposing a full scale system of national service, with various options for military or civilian service. Additional educational benefits would encourage people to go into the armed forces.

However the majority of congressmen are not yet ready to reintroduce registration. In September the House of Representatives voted 252-163 against an attempt supported by its Armed Services Committee to revive Selective Service registration of all 18-year-old males. The generals and admirals who make up the Joint Chiefs of Staff want to restore Selective Service registration of men and women, but President Carter apparently feels the country is not quite ready.

Students strongly protest registration

Student organizations have of course come out strongly against registration or any other move towards conscription. On the national level the United States Student Association has made opposition to the draft a major priority. However attempts to organize anti-draft demonstrations among today's quiet generation of students have not been very successful. Fewer than a hundred turned up for what had been billed as a mass rally against the draft in Washington, although up to a thousand have demonstrated against the draft at some universities, where they have been addressed by veterans of the Vietnam era protests, like David Hams.

So far the political debate has focussed on the military need for conscription and whether the all-volunteer forces are working. There has been very little analysis of the possible effects on education. These will depend partly on the generosity of the educational benefits the conscripts would be given when they leave the forces. If the government is prepared to pay their way through college or university as lavishly as it did for the veterans of World War Two, conscription could eventually increase postsecondary enrolment, after an initial decline.

Doubts about the all-volunteer forces

Charles Moskos of Northwestern University, a leading military sociologist, has severe doubts about the way the all-volunteer forces are working. He points particularly at the low educational achievements of today's army recruits — one third have failed to complete high school and only five per cent have any experience of college, compared to 14 per cent of volunteers in 1964 — and the over-reliance on blacks and poor undereducated whites as a source of volunteers.

But Professor Moskos says: "I myself am not a proponent of bringing back the draft. I think the volunteer force can work if the educated middle classes are brought back in." The only way to do that, he believes, is to provide educational benefits good enough to attract university-bound youngsters.

Ultimately, Professor Moskos says, the government may have to make national service a condition for obtaining a student grant or loan — an idea educators might find even less appealing than the draft. In November the House of Representatives took a first step in that direction by voting to allow graduates to write off 20 per cent or \$1,000 of a federal student loan for each year spent in the armed forces.

What is going to happen next? Dr. Marmion of the American Council on Education predicts: "The apparatus for registration will be activated. The military and the administration will speak up on the public and its opposition to compulsion. Congress will not vote at the present time for a change in the all-volunteer force but will allow an increase in preparation. How far Congress will go depends in large part on the near-term economic climate in the nation. If there is a recession, then the all-volunteer force will fill its ranks; if not, then Congress may well reinstitute a draft. If geopolitical circumstances warrant an increased active military establishment, Congress may be convinced to go further."



YORK UNIVERSITY

Principal, Glendon College

Applications and nominations are invited for the position of Principal of Glendon College, Glendon, one of York's ten Faculties, is an undergraduate, Liberal Arts College, offering degree programs in bilingual and unilingual streams. The College is located on the site of an old estate in the middle of Toronto.

Candidates should be distinguished scholars, should be fluent in French and English, and should have administrative experience.

The appointment is normally for a term of five years, and commences July 1, 1980. Applications and nominations will be accepted until March 1, 1980, and should be submitted to:

Search Committee for a Principal of Glendon College
c/o Dr. Wm. C. Found, Vice-President (Academic Affairs)
York University
4700 Keele Street
Downsview, Ontario M3J 1P3



YORK UNIVERSITY

Dean, Faculty of Fine Arts

Applications and nominations are invited for the position of Dean of the Faculty. The Faculty consists of Departments of Dance, Film, Music, Theatre and Visual Arts, with graduate studios in all departments. There are approximately 90 full-time faculty and 1300 students.

Candidates should be distinguished scholars and/or artists in one or more of the five areas, and should have an understanding of the other disciplines.

Candidates should have qualifications appropriate to a senior faculty appointment within a department and have administrative experience.

The appointment is normally for a term of five years, and commences July 1, 1980. Applications and nominations will be accepted until March 1, 1980, and should be submitted to:

Search Committee for a Dean of Fine Arts
c/o Dr. Wm. C. Found, Vice-President (Academic Affairs)
York University
4700 Keele Street
Downsview, Ontario M3J 1P3.

VICE-PRESIDENT (ACADEMIC) UNIVERSITY OF NEW BRUNSWICK

The University of New Brunswick invites applications for the position of Vice-President (Academic) on the Fredericton Campus, where there are more than 5,000 students enrolled in the Faculties of Arts, Education, Engineering, Forestry, Law, Nursing, Physical Education and Recreation, and Science, and Schools of Administration, Computer Science, and Graduate Studies and Research.

The Vice-President (Academic) is responsible to the President for the administration of the academic policies of the University. The candidate must be an established scholar with considerable experience in teaching and in administration. The appointee may hold a professorial appointment in an academic department of the University.

Term: 5 years, with a possibility of renewal for a further 5 years. Effective date: 1 July 1980.

Applications, which should include a c.v. and the names of three referees, and nominations, which must have the approval of the nominee, should be sent before 15 March 1980 to the Chairman of the Search Committee:



Dr. T. J. Condon,
University of New Brunswick,
P.O. Box 4400,
Fredericton, N.B., E3B 5A3.

UNIVERSITY OF NEW BRUNSWICK

Campaign promises..... from page 16

Better use of Canada's qualified scientists, engineers and technicians: In 1978 the Liberal government introduced a Science and Technology Employment Program to better utilize Canada's highly qualified scientific manpower. Many Canadian small and medium-size firms have used this Program in commencing R & D projects to develop new products and processes.

Industrial sector policies: a major component of industrial sector policies that were announced by the Liberal government was the encouragement and support of R & D. By way of example, the electronics sector benefited from a national development policy whereby \$50 million was made available to the industry over the next three years that would be used in large part for R & D to develop new manufacturing capabilities and products in the field of microelectronics.

In addition to the above other measures more directly affected universities.

Creation of a program of Innovation Centres: these centres were to be established at selected universities across Canada to train entrepreneurs and provide a focus for collaboration between universities and industry in product development and marketing. (The first two will be at the University of Waterloo and Ecole Polytechnique).

Re-organization of research granting councils: In 1978 two new councils were created—Natural Sciences and Engineering Council and Social Sciences and Humanities Council. With the Medical Research Council, these councils received special funding for university research in areas of national concerns that could directly bear upon Canada's economic and industrial development.

Finally, in November 1978 the federal government convened the first Federal/Provincial Conference of Ministers on Industrial R & D. The objective was to examine Canada's performance and prospects and to identify those areas of federal and provincial collaboration which could strengthen Canada's industrial base.

8. The Liberal Party accepts the Freedom of Information Bill (C-15) in principle and wishes to see an improved Bill become law.

9. Yes, while acknowledging difficulties may have to be overcome with respect to implementation.

10. Yes. The educational support program of Secretary of State requires liaison and consultation with the provinces, educational institutions, and national education associations.

By Michael Binyon

It has been called a K.G.B. training school, a college for subversion, a propaganda showpiece. For 19 years Patrice Lumumba University, the Soviet Union's main cultural contribution to the Third World, has been surrounded by controversy.

Yet the university, named after the first prime minister of the Congo, has survived and flourished. It now offers some 6,300 students from 96 countries training in Russian, a full university course, and the chance to go onto a higher degree. It boasts one of the best-qualified teaching staffs in the Soviet Union and a number of distinguished graduates who now occupy senior positions in their own countries.

Lumumba University was established by government decree in 1960 "in compliance with Leninist policy to render disinterested assistance to the peoples of developing countries." The university, which accounts for a large share of all Soviet non-military aid, has been regularly attacked in the West. Its academic standards have been said to be far below those of a normal university, especially in science, and the university has been called a school for political indoctrination.

"The first lie is no longer put about," says Vladimir Stanis, the rector. "Our university is recognized throughout the world as a fully accredited body.

"The second lie, however, persists in the press of the right and the ultra-left. A paper in Africa two years ago wrote that every day students have received training in sabotage and terror, that teachers have experience in hijacking planes.

"Well, those kinds of articles we can meet. But even some press organs which are considered respectable refer to Lumumba as a K.G.B. school. That shocks me."

The university was founded with the specific task of educating students from Africa, Asia, and Latin America. It does not take anyone from developed Western countries, and its charter states that it should give priority to applicants from poor and working-class families.

'Children of workers'

"The majority are children of workers and peasants and the intelligentsia," Mr. Stanis says. "There are no students from the bourgeoisie," which he defines as landowners, rich people who can afford tuition, or anyone who is in a position to exploit others.

"Bourgeois" students do study in the Soviet Union, but at ordinary universities, where they are admitted under bilateral agreements with other governments.

Admission to Lumumba is nominally free of political connections. Students apply through Soviet friendship societies in their own countries or through trade unions and women's committees. If there are no such committees in their home countries, prospective students can apply through Soviet embassies. The recommendations are forwarded to Moscow, and the university is empowered to admit whomever it wants, according to its special criteria.

When Salvador Allende was president of Chile, the local Soviet-Chilean friendship society held regular competitions for places, which Mr. Stanis himself went to Chile to attend. In theory, he says, Lumumba could still take students from Chile; in practice, he admitted, it does not.

In some countries competition is fierce. In India last year 30,000 people applied for 40 places.

All potential students have to have completed full secondary education. The university then takes marks and grades into consideration. Those who pass this hurdle are then winnowed according to social criteria. Being a Communist Party member is a clear advantage, although it does not circumvent the academic requirement.

The first thing all students have to do is to learn Russian, the only language of instruction. To know some in advance helps

The Soviet Union's controversial university for third world students

Is Patrice Lumumba U. a major contribution to underdeveloped nations, or is it just another propaganda showpiece, as some critics have charged?



but is not expected. The first year, which is a preparatory course, consists of intensive language studies and a general orientation in university life.

Participation of Soviet students

Foreigners make up only two-thirds of the student body. The rest are Soviet students. Their presence insures that Lumumba does bear some resemblance to a normal Soviet institution. They share rooms in the hostels with the overseas students, help them get to know Moscow, and, of course, give them daily practice in Russian.

Why should Russians want to attend a university set up for foreigners? Most are language students taking interpreters' courses. At Lumumba they have plenty of chance to practice English, French, Spanish, or other, less common languages. Many are hoping to get jobs working with Soviet development schemes or in posts overseas.

Lumumba makes no secret of the fact that it wants its Soviet students to act as guides and examples for the others. Priority is given to those who have worked for at least two years. In fact, 70 per cent have already begun their careers. In some fields, such as economics and law, no one is admitted directly from high school. Soviet military service also counts as work experience.

Old-fashioned discipline

The teaching is planned, structured, disciplined, and, in many ways, old-fashioned. There are weekly tests and work assignments; lectures are compulsory; and

anyone who falls behind is quickly taken under the wing of a fellow student who is asked to help him along. This approach, the teachers argue, is by far the best in such a heterogeneous community.

Testing is used to insure that students have understood the language and content of their classes and are ready to move on. The carefully graded structure is designed to bring students from widely varying cultural backgrounds up to roughly comparable levels of achievement.

Students are encouraged to talk over any academic and personal problems with their teachers, who also provide tutoring and maintain regular consultation hours. This is possible because of the generous staffing ratio: Lumumba has about 1,200 teachers, one for every six students.

The university rejects allegations that its academic standards do not measure up to those of other Soviet institutions. Of the teaching staff, 76 per cent have doctoral degrees. Faculty members are also expected to do research. Indeed, Lumumba has been cited by the Soviet Academy of Sciences for its research, and its faculty members have won medals and Lenin Prizes. A good budget has helped the university set up chairs to entice prominent scientists to the campus.

Science gets the main emphasis at the university, since this is what most students from developing countries want to learn. Mr. Stanis has tried to encourage interest in research among the undergraduates. Research should become part of the training process, he believes, so that students become acquainted with modern techniques. Each faculty has its own student scientific society, which is encouraged to

promote its own research. Some laboratories are set aside for the societies' use.

Mr. Stanis maintains that the scientific curriculum does not differ from Moscow State University, the Soviet Union's main university. But there are special courses geared to the needs of the students' home countries — agriculture and tropical medicine, for example.

How much is the teaching slanted to the Soviet view of the world? Lecturers make no pretense that it is otherwise. After all, they argue, Lumumba is a Soviet institution. But in such subjects as economics, they say, they recognize that the students will return to what are mostly capitalist countries and therefore need a background in "capitalist" economics. Still, the lecturer who teaches Marxist economics says he believes the students would themselves see the superiority of this system.

Obligatory study of communism

Like all Soviet institutions, Lumumba runs obligatory courses in communism and the history of the Soviet Union.

In spirit as well as content Lumumba reflects the standard Soviet viewpoint. "The most important quality we try to instill is collectivism," says Rector Stanis — inspiring students to work for the good of their country and not for money. Patriotism and internationalism are the university's guiding principles, he says. Students gain much from living together (no two people from the same country ever share a room).

Such an important social experiment is impossible in a capitalist country, argues Mr. Stanis, himself a party member. Collectivism, he says, gives students a feeling of friendship and instills respect between the sexes.

"Only a socialist country can bring up its students as patriots of their own country, because international capitalism knows no borders, and leads to such things as the brain drain," he says.

"I am often asked if I am pushing students to become communists. I am a communist, and of course I would like them to become communists." But, he insists, the university does not attempt to change a student's politics: "I don't know their political beliefs, but the majority of them are friends of the Soviet Union. The most important thing is that people should exist side by side."

Student committees

Institutionally, the university encourages such coexistence by making other students responsible for their fellows. Each dormitory has a student committee; each nationality group has its association and elected representatives; and the women, who constitute only one-fifth of the student body, have a separate committee of their own.

The committees are all granted access to the university authorities and are answerable to them. To a Westerner they might seem officious and intrusive on students' private lives. They are empowered to investigate any quarrels among the students, sort out personal problems, and reprimand someone on behalf of his peers.

One of their main functions is to reinforce student morale and get it to coincide with the authorities' wishes. The women's committee, for example, organizes competitions for the tidest room on the floor, inspecting rooms and awarding prizes. There is a faint air of a girls' boarding school.

The committees are also politically active, encouraging participation in demonstrations of solidarity with the Chileans, for example, or representing the university at official Soviet functions and parades. They act as unofficial cheerleaders representing the authorities to the students, rather than vice versa.

Lumumba's students seem to find all this acceptable. They appear to appreciate



**OPEN
LEARNING
INSTITUTE**

PRINCIPAL AND CHIEF EXECUTIVE OFFICER

This public institution, established in June 1978, is authorized to offer adult basic education programs, career/technical/vocational programs and bachelors degrees in arts and science as well as continuing education services. It delivers its programs by means of print, audio tape, and telephone, and is exploring the use of other techniques.

Initial program directions and management and delivery systems have been established. A well-qualified staff of approximately 100 has been hired. Forty courses are being offered and more are being developed. Some 2,000 students have been enrolled in 1979-80.

A principal is sought for September 1980 who will build upon the existing foundation and lead the institute toward its goal of being a significant cooperating member of the B.C. Post Secondary system intent on satisfying the unmet educational needs of adult learners in B.C. and perhaps elsewhere.

The successful candidate will possess the academic, professional and personal qualities and background which will make him or her credible as an educational leader. The candidate will have held senior, or very senior, academic and administrative rank in a university or college. Specific knowledge of and experience with distance education programs would be useful but is less important than stature as an educator. First hand knowledge of the B.C. higher education system, experience in working with a Board, coordinating councils and ministries of government, and broad experience with the more general chief executive officer responsibilities will be major considerations in the selection process.

Salary and benefits are negotiable.

The incumbent is not an applicant. The closing date for applications is March 1, 1980.

Applications and/or enquiries should be directed to:

Dr. B. P. Belrne, Chairman
Search Committee
Open Learning Institute
7671 Alderbridge Way
Richmond, B.C.
V6X 1Z9

DALHOUSIE UNIVERSITY

Department of Education

Educational Administration. 1. Assistant Professor (subject to availability of funds). 2. Doctorate or near with emphasis on economics/finance/budgeting; active research programme. 3. Teaching at undergraduate and graduate levels, graduate supervision, research. 4. Salaries and benefits in accordance with Dalhousie schedules. 5. Applications with curriculum vitae and the names of three referees: Chairman, Department of Education, Dalhousie University, Halifax, Nova Scotia, B3H 3J5. Commencement date July 1, 1980. Applications received to March 1, 1980.

DIRECTEUR GENERAL

(Ce poste est également ouvert aux hommes et aux femmes)

Regroupent la majorité des professeurs des universités du Québec, la FAPUQ les représente vis-à-vis le public en général, les gouvernements et ses conseils, les autres organismes syndicaux ou professionnels et, entre autres fonctions, assiste ses membres lors de la préparation, de la négociation et de l'application des conventions collectives.

EXIGENCES MINIMALES

- Détenir un diplôme universitaire de 2e cycle; de préférence avoir acquis de l'expérience dans le milieu universitaire;
- Personne dynamique ayant un esprit d'analyse et d'initiative; expérience pertinente en gestion; facilité de travail en équipe.

TRAITEMENT ET AVANTAGES SOCIAUX: à négocier.

DATE D'ENTREE EN FONCTION: 15 avril 1980

Faire parvenir votre curriculum vitae avant le 20 janvier 1980, à:

Comité de sélection
FAPUQ
2715, chemin de la Côte Ste-Catherine
Montréal (Québec)
H3T 1B5

La FAPUQ est une organisation syndicale regroupant le Syndicat général des professeurs de l'Université de Montréal, le Syndicat des professeurs de l'Université Laval, le Syndicat des professeurs de l'Université de Sherbrooke, McGill Association of University Teachers, Concordia University Faculty Association, Association of Professors of Bishop's University, l'Association des ingénieurs-professeurs des Sciences appliquées de l'Université de Sherbrooke, l'Association des professeurs de l'Ecole polytechnique, l'Association des professeurs de l'Institut Armand-Frappier et l'Association des professeurs de la Faculté de médecine de l'Université de Sherbrooke.



FEDERATION DES ASSOCIATIONS DE PROFESSEURS DES UNIVERSITES DU QUEBEC

EXECUTIVE DIRECTOR

(This competition is open to both men and women)

FAPUQ is a Quebec-wide organization which groups together the majority of the province's university professors. It speaks on their behalf to the various levels of government and government agencies, to other union and professional groups and before the public in general. Among other activities, FAPUQ assists its members in the preparation, negotiation and application of collective labor agreements.

MINIMUM REQUIREMENTS

- Dynamic personality, analytical ability and sense of initiative; appropriate management experience; ability to work on a team.
- A Master's degree; some type of previous experience in a university milieu would be an advantage.

SALARY AND BENEFITS: Negotiable

STARTING DATE: April 15, 1980.

Forward application accompanied by a curriculum vitae before January 20, 1980, to:

Search Committee
FAPUQ
2715, Côte Ste. Catherine Road
Montréal, Québec
H3T 1B5

Guideline on criteria for the evaluation of faculty members in architecture, the fine and performing arts, and other creative and applied arts

Introduction

Criteria normally employed for assessing faculty from various disciplines are teaching ability, quality of research and publication, and contribution both to the University and wider community. Whereas two of these criteria could well apply to a faculty member active in a creative or applied art, research and publication (though they may be germane in the case of some individuals) will not normally constitute the central thrust of the faculty member's creative involvement. Alternative criteria of assessment are therefore implied.

Criteria

Some criteria would be more applicable than others to creative arts as varied as architecture, communications, dance, drama, film, fine arts, music, and poetry; thus, the following criteria for assessment are listed solely as a guide.

(a) Evidence of creativity and innovation may be assessed by:

- (i) specific accomplishments, commissioned work, shows, performances, publications of creative work (e.g. poetry or fiction);
- (ii) the context of creative accomplishment (e.g., where a work is performed or exhibited);
- (iii) reviews of work and/or prizes and awards received.

(b) Evidence of continuing artistic production and development of creative abilities assessed by:

- (i) work in progress;
- (ii) new developments in work.

It should be recalled that several of the above criteria, together with previous teaching experience and letters of reference, may well have formed part of the decision to invite an individual to join the faculty in

the first place, and a degree of consistency would be expected in assessing a later stage in his/her career.

N.B. Where the activity of an individual faculty member does include research or publications that are germane to the creative or applied art concerned, due account should be taken.

Assessment Process

It is clear that subjectivity plays a role in all assessments of the quality of a faculty member's scholarship, research and teaching. Due to the particular role that subjective factors play in the evaluation of performance in the creative arts as well as the lack of generally agreed-upon criteria for such evaluation, it is particularly important that procedures be established to ensure a fair assessment process in the creative arts. Thus, it is recommended:

(a) that the fullest possible representation on the assessment committee be provided by peers in the faculty member's area of specialty;

(b) that when an insufficient number of faculty members from the area of specialty is available, then

- (1) members of the assessment committee should include representatives from other creative and applied arts; and
- (2) it is particularly important that outside experts be sought to assist in the assessment process;

(c) that this "Guideline on Criteria for the Evaluation of Faculty Members in Architecture, the Fine and Performing Arts, and other Creative and Applied Arts" act as a supplement to the CAUT Policy Statement on Academic Appointments and Tenure, Section 111 Guidelines.

Soviet Union from page 23

discipline and organization in their social life as well as in their work.

There is trouble at times. Tempers rise. Students dislike their roommates or get drunk. The university does not hesitate to expel those who persistently drink too much, fight, or score low marks.

One notorious former student who was expelled was Ilych Ramirez Sanchez, otherwise known as Carlos, the Venezuelan terrorist organizer. He studied for one term after the preparatory course. "He was incapable of following the courses. The university did not want him," the rector says.

The Soviet authorities take a hard line once a student is expelled: he will have difficulty returning to the country at all.

Students are free to travel to and from the West while studying at Lumumba, and many of them do so during the winter academic break. Britain, France, and Germany are favorite destinations; shopping seems to be the main motive.

During the summer vacations students have a chance to travel within the Soviet Union, and quite a few say they have been invited to stay in the homes of fellow Soviet students. The university organizes summer

work camps at which students are able to earn money, much like students in the West. Some boast they have even taken part in the construction of the Second Siberian Railroad, which the Soviet government calls the "project of the century."

Money is not otherwise plentiful. Students receive a monthly grant of 90 rubles (\$135). Those who consistently get good grades receive 100 rubles. The money is not convertible into foreign currency, but a number of students bring dollars, which they exchange — unofficially — at a far higher rate.

However, hostel charges are low, food is subsidized on the campus, books are inexpensive, and such things as public transportation are very cheap. Some students say they are able to save money each month from their grant.

What do they think about being grouped together on the outskirts of Moscow? Most seem to like it and few complain of isolation. They say they enjoy the international atmosphere and the support of fellow students from their own countries. Their main complaint seems to be the weather.

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invites applications and nominations for

Director of the School of Nursing

The School will develop and offer a post-basic baccalaureate program leading to a Bachelor of Nursing degree.

Desirable qualifications include:

1. an advanced degree and experience in Nursing,
2. experience in Nursing education and curriculum development at the University level,
3. the capability of dealing effectively with external organizations involved in health care education and delivery.

The appointment will commence on July 1, 1980 or earlier. Applications and nominations will be accepted until February 28, 1980, and should be sent to:



Vice-President (Academic)
University of Lethbridge
4401 University Drive
Lethbridge, Alberta
T1K 3M4

DEAN

FACULTY OF SCIENCE

Applications and nominations are invited for the position of Dean of the Faculty.

The Faculty of Science offers degrees to the M.Sc. level in Biology, Chemistry, Geology, Mathematics and Physics.

Candidates should be distinguished as teachers, scholars and should have demonstrated administrative competence.

The appointment will be for an initial term of five years commencing July 1, 1980. Applications and nominations should be submitted by March 15, 1980 and should be directed to:

Mr. Donald E. Ayre
Secretary of the University
Lakehead University
Thunder Bay, Ontario P7B 5E1
Canada

Lakehead University

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Civil Liberties Defence Fund

Individuals, local and provincial associations are invited to contribute to the CAUT Civil Liberties Defence Fund. The Fund has been established as a Charitable Trust for the following purposes:

1. To advance and assist in the attainment and defence of civil liberties
2. To support individuals and groups seeking to establish or protect their freedom in any field
3. To promote public awareness as to the issues affecting civil liberties and freedom

A Board of five trustees, who are members of the Academic Freedom and Tenure Committee, administer the Fund under the terms of the Trust document and by-laws passed from time to time.

Contributions are tax-deductible and all contributions will be added to the principal of the Fund. Until the principal reaches \$100,000 disbursements may be made only from the earnings of the Fund.

To make contributions or for further information, please write to:

The Executive Secretary
Canadian Association of University Teachers
75 Albert Street, Ottawa
K1P 5E7

ACCOUNTING

SAINT MARY'S UNIVERSITY. Department of Accounting. Openings exist at Saint Mary's University for accounting professors committed to academic excellence and interested in maintaining St. Mary's traditionally high standards of developing accounting professionals. A combination of professional and academic credentials is sought for permanent and short term appointments commencing September 1, 1980. Send resume to: H. Bryan Emerson, Chairman, Department of Accounting, Saint Mary's University, Halifax, Nova Scotia B3H 3C3.

UNIVERSITY OF OTTAWA. Accounting. Faculty positions in accounting starting July 1, 1980. Tenure track appointments require Ph.D. degree in hand or near completion. Rank and salary, open to negotiation, depend on experience and research. Applicants should have a strong commitment to teaching and an interest in conducting research. Bilingualism (English and French) would be an asset. All courses at both the undergraduate and graduate levels are offered in English and French. Send resumes to Dr. Eric P. Lande, C.A., Coordinator, Accounting, Faculty of Administration, University of Ottawa, 115 Wilbrod Street, Ottawa, Ontario, K1N 9B5.

UNIVERSITY OF OTTAWA. Comptabilité. Postes à plein temps en comptabilité disponibles le 1er juillet 1980. Les candidats espérant obtenir la permanence devront posséder un doctorat ou être près de le ter-

miner. Rang et salaire selon les qualifications et l'expérience. Enseignement au niveau gradué et au niveau du 1er cycle et recherche. Le bilinguisme (français et anglais) serait un atout. Tous les cours sont offerts dans les deux langues officielles. Faire parvenir votre curriculum vitae à Dr. Eric P. Lande, C.A., Coordonnateur, Comptabilité, Faculté d'Administration, Université d'Ottawa, 115 rue Wilbrod, Ottawa, Ontario, K1N 9B5.

UNIVERSITY OF TORONTO. Department of Political Economy. Accounting. 1. Assistant or Associate Professor, in the tenure stream. 2. Ph.D. in hand or near completion; strong research interest. 3. Teaching graduate and undergraduate courses in financial and/or management accounting on the Erindale and St. George campuses. 4. Competitive, commensurate with experience and research record. 5. Professor George Leonidas, Director of Commerce and Finance, Department of Political Economy, University of Toronto, 100 St. George Street, Toronto, Ontario, Canada M5S 1A1. 6. July 1, 1980. 7. When position filled.

SCARBOROUGH COLLEGE, UNIVERSITY OF TORONTO. Commerce Department. Applications are invited for a tenure-stream appointment in Accounting at the rank of assistant or associate professor. Candidates should hold appropriate academic and/or professional qualifications and have a demonstrated interest in research. While the primary teaching responsibility would be at the undergraduate level, some graduate participation might also be arranged. This position is subject to approval by the Provost and would commence July 1,

1980. Letters of applications, together with curriculum vitae and the names of three referees, should be sent by February 29, 1980 to: Professor H. Bablak, Assistant Chairman, Commerce, Scarborough College, University of Toronto, West Hill, Ontario M1C 1A4.

ADMINISTRATIVE POSITIONS

UNIVERSITY OF TORONTO. Department of Physiology. University title: Professor and Chairman. Qualifications required: Ph.D. and/or M.D. with high level of achievement in research and experience in teaching and other academic activities. Nature of duties: To administer the department including research, undergraduate and graduate training in the Faculty of Medicine and other Faculties. Salary: Commensurate with qualifications and experience. Enquiries should be sent to: Dr. K. J. Dorrington, Chairman of Selection Committee and Associate Dean, Basic Sciences, Faculty of Medicine, Medical Sciences Building, University of Toronto, Toronto, Canada M5S 1A5. Effective date of appointment: July 1, 1980. Closing date for receipt of applications: March 1, 1980.

UNIVERSITY OF TORONTO. Department of Preventive Medicine and Biostatistics. University title: Professor and Chairman. Qualifications required: M.D. preferred with advanced academic qualifications, significant experience in health field, medical education and graduate education — active research record. Must be eligible for Graduate School appointment. Nature of duties: Teaching activities focus on epidemiology, biostatistics, public health and preventive medicine. The Department, as part of the Division of Community Health, is active in teaching medical undergraduates in all years. Extensive graduate and post-graduate teaching are undertaken through the graduate department of Community Health in M.H.Sc. and Ph.D. programs, as well as for the Royal College residency in Community Medicine. The Department is active with other divisions of the University. There is a varied and intensive research program as well as extensive support in research design to other divisions and researchers. Two major cancer epidemiology units and a broad base in studies of disease epidemiology and research on prevention are emphasized. Salary is commensurate with experience. Person to whom enquiries should be sent: Dr. J. F. Hastings, Associate Dean, Community Health, Faculty of Medicine, Room 2113B, Medical Sciences Building, University of Toronto, Toronto, Ontario M5S 1A8. Effective date of appointment: July 1, 1980. Closing date for receipt of applications: March 1, 1980.

UNIVERSITY OF TORONTO. Department of Paediatrics. Hospital Department: Paediatrics. University Title: Professor. Hospital Title: Director of Division of Nephrology. Qualifications required: Paediatrician with Training and Experience in Paediatric Nephrology. Should have a research background. Nature of Duties: To direct the Division of Nephrology of the Department of Paediatrics, University of Toronto, at the Hospital for Sick Children. This includes the Dialysis and Transplant Programmes in this Division. Should have experience and an interest in clinical research. Salary: Commensurate with applicant's academic record and experience. Person to whom enquiries should be sent: Letters of Inquiry and curriculum vitae should be sent to Dr. David H. Carver, Hospital for Sick Children, 555 University Ave., Toronto, Ontario, M5G 1X8. Effective Date of Appointment: July 1st, 1980. Closing date for receipt of Applications: May 15th, 1980.

UNIVERSITY OF TORONTO. Department of Pathology. University title: Professor. Hospital title: Pathologist-in-Chief, St. Michael's Hospital. Qualifications required: Recognized specialist certification, applicants should have demonstrated orientation to academic pathology with an ap-

preciation for both teaching and research. Nature of duties: Requires an experienced pathologist to assume overall responsibility for an active academic pathology department in a hospital affiliated with the University of Toronto. Salary: Commensurate with experience. Person to whom enquiries should be sent: Dr. E. Farber, Chairman, Department of Pathology, University of Toronto, 100 College Street, Toronto, Ontario M5G 1L5. Effective date of appointment: April 1, 1980. Closing date for receipt of Applications: March 1, 1980.

TRENT UNIVERSITY. Administrative and Policy Studies Program. Trent University is seeking a Director for its Administrative and Policy Studies Program. The successful candidate will be responsible for administering a four year honours undergraduate program in addition to teaching and undertaking research in one of the following areas: marketing, administration, accounting, management science and corporate law. The appointment will be effective from July 1, 1980. Applicants must submit a curriculum vitae and the names of three referees to Professor H. M. Kitchen, Director, Administrative and Policy Studies Program, Trent University, Peterborough, Ontario, K9J 7B8.

UNIVERSITY OF TORONTO. Department of Rehabilitation Medicine. University Title: Director of Occupational Therapy and Associate Professor. Qualifications required: Qualified Occupational Therapist; Doctoral degree preferred; clinical and university teaching experience in occupational therapy. This position is for Director, Division of Occupational Therapy. Nature of Duties: To act as Director of a Division which offers a programme leading to a Bachelor of Science (Occupational Therapy) and a degree completion programme for diploma graduates. Salary: Negotiable according to qualifications and experience. Person to whom enquiries should be sent: Dr. John S. Crawford, Chairman, Department of Rehabilitation Medicine, Faculty of Medicine, University of Toronto, 256 McCaul Street, Toronto, Ontario, M5T 1W5. Effective Date of Appointment: July 1st, 1980. Closing Date for receipt of Applications: February 29, 1980.

SHAUGHNESSY HOSPITAL. Department of Pathology. The Department of Pathology, Shaughnessy Hospital invites applications for the position of Head of the Division of Medical Biochemistry. The successful candidate will be an experienced medical biochemist who would qualify for academic appointment with the Department of Pathology, University of British Columbia, Faculty of Medicine. High priority will be placed on teaching and research activities of the hospital. Remuneration and academic rank commensurate with credentials and experience. Send curriculum vitae and the names of three professional references to: W. L. Dunn, M.D., Director, Department of Pathology, Shaughnessy Hospital, 4500 Oak Street, Vancouver, B.C., V6H 3M1.

MEMORIAL UNIVERSITY OF NEWFOUNDLAND. Department of Computer Science. Applications are invited for the position of Head of a recently created Department of Computer Science in the Faculty of Science. Position to be filled as soon as possible. Candidates should have demonstrated teaching and scholarly research abilities, indicative of senior rank, with a fairly broad background in computer science and the capabilities of exercising academic and administrative leadership. A Ph.D. in Computer Science or related areas is required. The Head would be responsible for developing future research programs, including the introduction of a Ph.D. program. An M.Sc. program is already in existence. The undergraduate program is well established and is rapidly expanding, with approximately two hundred full-time majors. At present, there are seven full-time faculty members with additional posts to be created, supported by several part-time Sessional Lecturers. Salary is negotiable. Please send curriculum vitae and the names of three references to: Dr. P. J. Heald, Dean of Science, Chemistry-Physics Building, C-335, Memorial University of Newfoundland, St. John's, Newfoundland, A1B

3X7, Canada.

THE UNIVERSITY OF MANITOBA. Department of Civil Engineering. The University of Manitoba invites applications and nominations for the position of Department Head — Civil Engineering. The Department has 23 full-time faculty members and offers undergraduate and graduate programs leading to B.Sc., M. Eng., S.Sc., and Ph.D. degrees. It has strong commitments to research, and active liaison with Civil Engineering practice. Candidates should have academic and/or professional distinction, proven leadership ability, and some administrative experience. The position is tenure stream and the Headship appointment will be normally for an initial term of five years, renewable upon review. Salary is negotiable. Canadian citizens, landed immigrants, and others eligible for employment in Canada at the time of application are especially encouraged to apply. Applications and/or nominations should be forwarded before March 15, 1980 to Dr. E. Kufel, Dean of Engineering, University of Manitoba, Winnipeg, Manitoba R3T 2N2.

UNIVERSITY OF MANITOBA. Department of Clothing and Textiles. Applications are invited for the position of Head, Department of Clothing and Textiles, Faculty of Home Economics. Candidates should have the following qualifications: Ph.D. or demonstrated equivalence in textiles, clothing or related areas; demonstrated leadership and administrative skills; evidence of scholarly achievement, and a competent university teaching record. Experience in working with government, business or industry would be an asset. The Head reports to the Dean of the Faculty of Home Economics and is responsible for management of the Department and for leadership, coordination and participation in the teaching, research and community service activities of the Department. The appointment is a tenure stream position at the rank of associate or full professor. Rank and salary commensurate with qualifications and experience. Canadian citizens, landed immigrants, and others eligible for employment in Canada at the time of application are especially encouraged to apply. Position effective from July 1, 1980. Applications including academic credentials, resume of professional and research qualifications, and the names of at least three referees should be sent to Dr. Bruce E. McDonald, Dean, Faculty of Home Economics, University of Manitoba, Winnipeg, Manitoba, R3T 2N2.

THE UNIVERSITY OF BRITISH COLUMBIA. Faculty of Dentistry. The University of British Columbia is seeking a Head for its Department of Orthodontics which has academic responsibility for teaching both dental and dental hygiene students. It is expected that programs at the graduate and postgraduate levels will be developed. The prospective candidate should have a registrable specialist qualification in Orthodontics, and extensive clinical, teaching and research experience. A demonstrated ability in administration would be a desirable asset. The successful candidate will receive an academic rank appropriate to his or her scholastic accomplishments. Salary is negotiable. The effective date of the appointment will be arranged but will not be later than July 1, 1980. Applications, nominations or inquiries should be sent to: The Chairman, President's Selection Committee, The University of British Columbia, Faculty of Dentistry, Office of the Dean, 2194 Health Sciences Mall, University Campus, Vancouver, B.C., Canada V6T 1W5.

UNIVERSITY OF ALBERTA. Department of Physical Therapy. Applications are invited for the position of Chairman in the Department of Physical Therapy, Faculty of Rehabilitation Medicine at the University of Alberta, Edmonton, Alberta, Canada. The Chairman has the responsibility for administration, teaching and participation in research in the undergraduate and graduate programmes. Preference will be given to applicants with demonstrated performance in research and administration. Education in Physical Therapy at a graduate degree are pre-requisites. Position to commence July 1, 1980. Closing date for applications is March 1st, 1980. Applications, curriculum vitae, and the names of three referees should be submitted to: Acting Dean, B.B. Fifield (Mrs.), Faculty of Rehabilitation Medicine, 316 Corbett Hall, University of Alberta, Edmonton, Alberta, Canada T6G 2G4. The University of Alberta is an equal opportunity employer.

ASSOCIATION OF CANADIAN UNIVERSITIES FOR NORTHERN STUDIES. Executive Director. Beginning September 1,

1980. Initial appointment for two years; secondment possible. ACUNS is an Association of 28 Canadian universities active in northern studies and research. Qualifications: The position requires working knowledge of Canadian universities; and/or related government activities; administrative skills; research or comparable northern experience in university and/or government. Remuneration at university scale. Submit resume or inquiries by May 15, 1980, to: J. G. Nelson, Chairman, Search Committee, Faculty of Environmental Studies, University of Waterloo, 200 University Avenue, West, Waterloo, Ontario N2L 3G1.

THE UNIVERSITY OF WESTERN ONTARIO. Department of Journalism. Dean of Journalism. Applications and nominations are invited prior to February 28, 1980. Date of appointment will be January 1, 1981. Please direct to: Dr. B. J. Shapiro, Vice-President (Academic) & Provost, Stevenson-Lawson Building, University of Western Ontario, London, Ontario, N6A 5B8.

SAINT MARY'S UNIVERSITY. Department of Mathematics. Applications are invited for the position of Chairperson of the Department of Mathematics at Saint Mary's University. The appointment is effective from September 1, 1980 and is for an initial period of three years. Candidates should have a well-established reputation in research and scholarship, hold a doctorate in one of the mathematical sciences, possess a broad understanding of the mathematical sciences, and be able to encourage active research and quality teaching. Applications, including curriculum vitae and names of three referees, should be sent to: Dr. J. L. Ginsburg, Dean of Science, Saint Mary's University, Halifax, N.S. B3H 3C3. Competition closes when the position is filled.

UNIVERSITY OF SASKATCHEWAN. College of Commerce. Head of the Department of Finance and Management Science. Academic Rank: Associate or Full Professor depending upon academic qualifications and experience of the candidate. Effective date of appointment: The successful candidate should be available no later than January 1, 1981, but preferably by July 1, 1980. Qualifications: A doctorate in Finance and/or Management Science or other discipline is required. The successful candidate will possess a record of significant academic and administrative accomplishments. Responsibilities: The Department Head has general academic and administrative responsibility for the direction and operation of the Department. The Head is expected to provide leadership in formulating departmental policies and in the planning and development of academic programs. Although responsible for communication, organization and administration within the Department, the Department Head is also expected to remain a scholar actively involved in teaching and research. Environment: The Department has eight permanent faculty members and four to six seasonal lecturers. The College of Commerce has forty-two full-time faculty members and in excess of 1,300 (undergraduate and graduate) students. The University of Saskatchewan has a student population of over 10,000. The University is located in Saskatoon, a city of 160,000 with excellent schools and other public facilities. Further information: Interested candidates should send their resumes to: Dean P. Michael Maher, Ph.D., College of Commerce, University of Saskatchewan, Saskatoon, Saskatchewan, Canada S7N 0W0. Phone: (306) 343-3761.

UNIVERSITY OF WINDSOR. School of Social Work. The School of Social Work at the University of Windsor invites applications for the position of Director. Applicants should hold a D.S.W. or Ph.D. with special studies in research and social policy. Appointment is for an initial term of 6 years which may be renewed for a further 3 years, and will be effective July 1, 1980. Rank and Salary are open to negotiation. Written applications should be forwarded to: Harry M. Morrow, Chairman, Selection Committee, School of Social Work, University of Windsor, Windsor, Ontario.

ANATOMY

THE UNIVERSITY OF ALBERTA. Department of Anatomy. The Department anticipates funding for a vacancy as Assistant Professor, commencing July 1, 1980 and invites applications. The applicant is ex-

pected to have a commitment to research and previous teaching experience, preferably in Neuroanatomy/Histology, is desired. Applications should include a covering letter, curriculum vitae, list of publications, and the names of three referees. Applications should be directed before April 1, 1980 to: Dr. T.S. Leeson, Professor and Head, Department of Anatomy, University of Alberta 5-09 Medical Sciences Building, Edmonton, Alberta, Canada, T6G 2Z7. The University of Alberta is an equal opportunity employer.

ART/ART HISTORY

UNIVERSITY OF SASKATCHEWAN. Department of Art. 1. Assistant Professor, tenure track. 2. Ph.D. in Medieval Art preferred; interest in teaching Canadian Art desirable. 3. Teach the following courses (three per year): Introduction to History of Art, Early Medieval and Romanesque Art and Architecture, Art in Canada, Art and Architecture of Classical World, Gothic Art and Architecture. 4. Salary: \$18,000 minimum. 5. Please send curriculum vitae, names of the referees, and any offprints to: S.E. Day, Head, Department of Art, University of Saskatchewan, Saskatoon, Saskatchewan, S7N 0W0. 6. Date of Appointment: 1 July 1980. 7. Competition Closes: 1 March 1980. Position is subject to budgetary confirmation.

UNIVERSITY OF LETHBRIDGE. Department of Art. 1. "One position at the Assistant Professor level subject to the availability of funding". 2. Master of Fine Arts degree or equivalent, a proven competence in working a variety of sculpture media and relevant Canadian teaching experience. 3. Teaching of three-dimensional design and sculpture at the undergraduate level. 4. Salary Schedule (1978-79): Assistant Professor \$20,446-\$28,616. 5. Portfolio and/or slides should be available upon request. Applications including a curriculum vitae, transcripts and three letters of reference, should be sent to: Professor Herbert A. Hick, Chairman, Department of Art, The University of Lethbridge, 4401 University Drive, Lethbridge, Alberta T1K 3M5. 6. Tenure track position. Probationary appointment for one year beginning July 1980. 7. Closing date: 28 February, 1980.

BIOLOGY

UNIVERSITY OF PRINCE EDWARD ISLAND. Department of Biology. Applications are invited for a 5-month term sabbatical leave replacement position at the Assistant Professor level for the period January 1, 1980 to May 1980. Teaching duties will consist of lectures and laboratories in Cell Physiology and Animal Physiology. Applicants should have a Ph.D. and teaching experience is preferred. Salary will be according to qualifications but will be approximately \$10,000. Send curriculum vitae and the names of three referees to: I.G. MacQuarrie, Chairman, Biology Department, University of Prince Edward Island, Charlottetown, Prince Edward Island, Canada C1A 4P3.

THE UNIVERSITY OF BRITISH COLUMBIA. Biology. Research Associate in environmental carcinogenesis unit. Candidate to take full responsibility for new project on induction of melanoma in platyfish/swordtail hybrids by isolated DNA fragments. Ph.D. in biochemistry or related subject and previous experience with Xiphophorus melanoma system. Apply with curriculum vitae to: Dr. H.F. Stich, Environmental Carcinogenesis Unit, B.C. Cancer Research Centre, 601 West 10th Avenue, Vancouver B.C. V6Z 1L3.

UNIVERSITY OF CALGARY. Faculty Positions in Biology. Applications are invited for a tenure stream position in Microbiology-Molecular Biology, and an anticipated position in Aquatic Ecology both at Assistant Professor rank commencing June 1, 1980. Candidates for both positions must have Ph.D. completed and relevant research and teaching experience. The position involves teaching in the appropriate area at undergraduate and graduate levels plus development of an independent research programme. Salary commensurate with qualifications and experience (floor 1978-79 was \$19,785; floor for 1979-80 has not been established). Applicants should send a recent curriculum vitae and names of three

referees to: R.M. Roy, Chairman, Biology, Concordia University, 1455 de Maisonneuve Blvd., West, Montreal, Quebec, H3G 1M8.

MOUNT SAINT VINCENT UNIVERSITY. Biology Department. 1. Assistant professor. 2. Ph.D. with specialization in microbiology; teaching experience preferred. 3. Undergraduate teaching in general and food microbiology; introductory biology. 4. Current floor: \$16,700. 5. Send application including curriculum vitae and names of three professional referees to: Dean of Humanities and Sciences, Mount Saint Vincent University, Halifax, Nova Scotia, B3M 2J6. 6. July 1, 1980 (position subject to budgetary approval). 7. Applications will be accepted to March 1, 1980.

UNIVERSITY OF SASKATCHEWAN. Department of Biology. Postdoctoral position available to investigate the use of liposomes for the uptake of macromolecules and organelles into plant protoplasts. Candidate should have strong background in biochemistry and some knowledge of electron microscopy. The position is available immediately for a two year term (possibly renewable for a third year) at a salary of \$C 12,500 to \$C 13,500. Interested candidates should send curriculum vitae and three letters of recommendation to Dr. L.C. Fowke, Department of Biology, University of Saskatchewan, Saskatoon, Sask., Canada S7N 0W0.

BUSINESS ADMINISTRATION AND COMMERCE

DALHOUSIE UNIVERSITY. Department of Business Administration. Applications are invited at various ranks in all areas including Accounting, Financial Management, Information Systems, Marketing, Policy, Statistics, Transportation and International Business. Distinguished scholars in other fields will also be considered. Qualifications required are a genuine interest in teaching and a strong research orientation. Salary and rank will be commensurate with the applicant's qualifications and experience. Enquiries should include a curriculum vitae and the names of three referees and should be sent to: Dr. J.H. Scheibhut, Director, School of Business Administration, Dalhousie University, Halifax, Nova Scotia, B3H 4B8.

THE UNIVERSITY OF ALBERTA. Faculty of Business Administration and Commerce. Applications are invited for faculty positions from those with teaching and research interests in accounting, finance (especially financial theory, corporate finance, or insurance), management science, marketing, business policy, personnel, industrial relations and legal relations. Ph.D. or equivalent is desirable. Salary and rank depend on qualifications. Applications welcome until positions are filled. Appointments normally effective July 1. Send resume to: Dr. Roger S. Smith, Dean, Faculty of Business Administration and Commerce, University of Alberta, Edmonton, Alberta T6G 2G1. The University of Alberta is an equal opportunity employer.

BROCK UNIVERSITY. Administrative Studies. Applications are invited for new teaching positions. Candidates should have competence in one or more of the following areas: Management, Production/Management Science, Organizational Behaviour, Marketing. A Ph.D. or Ph.D. in progress, or the equivalent is preferred. Salary and rank will be commensurate with qualifications and experience. An application, including a curriculum vitae and the names of three referees, should be submitted to: J.R. Hanrahan, Director, School of Administrative Studies, Brock University, St. Catharines, Ontario L2S 3A1.

THE UNIVERSITY OF CALGARY. Faculty of Management. The University of Calgary, Faculty of Management, is seeking qualified candidates to fill positions in all areas including Accounting, Policy and Environment, Finance, Industrial Relations, Management, Marketing, Management Science and Management Information Systems beginning July 1, 1980. Ph.D. or D.B.A. preferred. Rank and salary based on qualifications and experience. Applications should be sent to: Dr. J. H. Hanrahan, Dean, Faculty of Management, The University of Calgary, Calgary, Alberta T2N 1N4.

CONCORDIA UNIVERSITY. Department of Marketing. 1. Assistant, Associate or Full Professor. 2. Ph.D. in Marketing. 3. Teaching in undergraduate and graduate programmes; research and publication interests are

expected. 4. Salary highly competitive. 5. Dr. K.L. McGown, Chairman, Department of Marketing, Faculty of Commerce & Administration, Concordia University, 1455 de Maisonneuve, Boulevard West, Montreal, Quebec H3G 1M8. 6. 1 July, 1980. 7. When position filled.

CONCORDIA UNIVERSITY. Department of Management. Applications are invited for the following teaching positions: Business Policy, Administrative Theory, Industrial Relations and Small Business. Qualifications required: Ph.D. or DBA. Duties involve teaching and research. Rank and salary are based on candidate's qualifications and experience. Direct replies to: A. Gram, Associate Professor & Acting Chairman, Department of Management, Concordia University, 1455 de Maisonneuve Blvd. West, Room GM 503-09, Montreal, Quebec H3G 1M8. Phone: (514) 879-8106.

UNIVERSITY OF LETHBRIDGE. Department of Management Arts. Rank: Assistant or Associate Professor. Qualifications: Doctorate or Masters plus advanced study and experience. Duties: Teaching and research in one or more of the following areas: accounting, finance, general management, management science, salary and rank. Dependent upon qualifications, 1978-79 minima: Assistant Professor—\$20,446; Associate Professor—\$26,180. Inquiries or Applications: Send to L.G. Hoye, Acting Chairman, Department of Management Arts, University of Lethbridge, 4401 University Drive, Lethbridge, Alberta, T1K 3M4. Closing date: When filled.

DALHOUSIE UNIVERSITY. School of Business Administration. Applications are invited for faculty positions in international business administration with teaching responsibilities in the MBA and B.Com. programmes. Rank and salary are dependent upon professional and academic qualifications. Teaching and research in international business are supported by the Centre for International Business Studies. For enquiries to: Dr. D.J. Patton, Room 5110, Killam Library, Dalhousie University, Halifax, Nova Scotia, B3H 4H8 Tel. (902) 424-6553.

THE UNIVERSITY OF MANITOBA. Department of Business Administration. Two positions available January or September 1980 at the Assistant or Associate level; one to teach Retailing Management plus one other area in marketing of personal interest; the other position to teach Production/Operations Management, plus one other area of personal interest. Ph.D. or ABD with near completion date required for Assistant level, proven research record for Associate level. Teaching in undergraduate and MBA programs. Contact: Dr. M.D. Beckman, Acting Head, Department of Business Administration, University of Manitoba, Winnipeg, Manitoba R3T 2N2.

THE UNIVERSITY OF MANITOBA. Department of Business Administration. Two positions available January or September 1980 at the Assistant or Associate level in Marketing and the other Production/Operations Management. Ph.D. or ABD with near completion date required for Assistant level, proven research record for Associate level. Teaching in undergraduate and MBA programs. Canadian citizens, landed immigrants, and those eligible for employment in Canada at the time of application are especially encouraged to apply. Contact: Dr. M.D. Beckman, Acting Head, Department of Business Administration, Faculty of Administrative Studies, University of Manitoba, Winnipeg, Manitoba R3T 2N2.

MCMMASTER UNIVERSITY. Faculty of Business. Applications are invited in the following areas: (i) Accounting, (ii) Business Policy, (iii) Finance, (iv) Management Information Systems, (v) Marketing and International Business, (vi) Marketing Research, (vii) Production and/or Management Science. One position each in Accounting and Finance are tenure-track appointments. The categories in the other fields are to be decided. Rank depends on qualifications and experience, preferably at the Assistant or Associate Professor level. Visiting appointment is also possible. Ph.D. or DBA degree is expected, preferably with teaching and research experience. Duties include research and teaching at both graduate and undergraduate levels. Applicants for Management Information Systems, Production and/or Management Science will be expected to contribute to the Ph.D. program in these areas. Applicants in both fields of Marketing will have to teach courses in Marketing, Marketing, International Business will include courses

in International Marketing and Comparative Marketing; Marketing Research will include advanced research methodology covering qualitative and quantitative aspects. Salary will commensurate with qualifications, teaching and practical experience. Appointment date is open; July 1st, 1980 is preferred. Application date closes when position is filled. Applications should be sent to Dr. A.Z. Szendrovi, Dean, Faculty of Business, McMaster University, Hamilton, Ontario L8S 4M4.

MOUNT SAINT VINCENT UNIVERSITY. Department of Business Administration. Mount Saint Vincent University invites applications for a position in their business administration department to commence July 1, 1980. Responsibilities will be to teach undergraduate courses in management. Preference will be given to candidates with a Ph.D. or near-completion in business, and some teaching experience. Rank and salary will be in accordance with qualifications and experience. Send curriculum vitae and the names of three references to Dr. Susan Clark, Dean of Human and Professional Development, Mount Saint Vincent University, Halifax, N.S. B3M 2J6.

UNIVERSITY OF OTTAWA. Management/Administrative Studies/Business Administration. Faculty of Administration, University of Ottawa has a position in management information systems starting July 1, 1980. Ph.D. or D.B.A. in hand or near completion. Business experience an asset. Research and teaching at the undergraduate and graduate level. Opportunities for program development and professional involvement. Salary and rank based on qualifications and experience. Send curriculum vitae to Dr. J. Callahan, Coordinator, Management Science, Faculty of Administration, University of Ottawa, 135 Wilbrod Street, Ottawa, Ontario, K1N 9B5. (telephone: 231-3330).

UNIVERSITÉ D'OTTAWA. Marketing, Faculté d'Administration. Université d'Ottawa. Poste à plein temps en marketing disponible le 1er juillet 1980. Le candidat devra posséder un doctorat ou être près de le terminer et devra enseigner en français au niveau gradué et au niveau du 1er cycle. Rang et salaire selon les qualifications et l'expérience. S'adresser par écrit à Dr. S. Ahmed, Coordonnateur, Marketing, Faculté d'Administration, Université d'Ottawa, 135 rue Wilbrod, Ottawa, Ontario, K1N 9B5. (téléphone: 231-3330).

UNIVERSITÉ D'OTTAWA. Finance. Poste à plein temps en finance disponible le 1er juillet 1980. Le candidat devra posséder un doctorat ou être près de le terminer et devra enseigner en français au niveau gradué et au niveau du 1er cycle. Rang et salaire selon les qualifications et l'expérience. S'adresser par écrit à Dr. J. Lefol, Coordonnateur, Finance, Faculté d'Administration, Université d'Ottawa, 135 rue Wilbrod, Ottawa, Ontario, K1N 9B5.

UNIVERSITÉ D'OTTAWA. Gestion du Personnel et Relations Industrielles. Poste à plein temps en gestion du personnel et/ou relations industrielles disponible le 1er juillet 1980. Le candidat devra posséder un doctorat ou être près de le terminer et devra enseigner en français au niveau gradué et au niveau du 1er cycle. Rang et salaire selon les qualifications et l'expérience. S'adresser par écrit à Dr. J.M. Guio, Coordonnateur, Gestion des ressources humaines, Faculté d'Administration, Université d'Ottawa, 135 rue Wilbrod, Ottawa, Ontario, K1N 9B5.

QUEEN'S UNIVERSITY. School of Business. Assistant or Associate Professor(s). Positions open for applicants holding Ph.D. Teaching and research duties in any of the principal fields of Accounting and Information Systems, Finance, Production and Operations Management, and Business Policy. Competitive salary levels depending on experience. Candidates of both sexes are equally encouraged to apply.

Send resume to: Dean J.R.M. Gordon, School of Business, Queen's University, Kingston, Ontario, K7L 3N6.

THE UNIVERSITY OF REGINA. Faculty of Administration. Associate or Assistant professor in management/policy and one of marketing, finance, public management, personnel and industrial relations. Preference will be given to Ph.D./D.B.A. with some business or government experience. Salary is competitive, depending on overall qualifications. Interested candidates please send c.v. and names of referees to Dean Don E. Shaw, Faculty of Administration, University of Regina, Regina, Sask. S4S 0A2. Effective date of appointment 1 July, 1980.

THE UNIVERSITY OF REGINA. Faculty of Administration. Accounting professor at level of Associate or Assistant. Preference to Ph.D./D.B.A. but will consider M.B.A./M.Sc. plus professional accounting designation. This is an opportunity for professors who would like to work in an open, interdisciplinary environment, with good opportunities for professional involvement. Interested candidates please send c.v. and names of referees to Dean Don E. Shaw, Faculty of Administration, University of Regina, Regina, Sask., S4S 0A2. Effective date of appointment 1 July, 1980.

UNIVERSITY OF SASKATCHEWAN. College of Commerce. One limited term position in Management Science. The candidate must have a Master's Degree in Statistics or Operations research. The successful candidate will have the ability to teach undergraduate classes in business statistics. Preference will be given to persons who are interested in putting their education leading to a doctorate in Management Science. Rank: Instructor, Lecturer, or Assistant Professor, depending upon the qualifications of the candidate. Effective date of appointment: July 1, 1980. Contact: Dean P. Michael Maher, College of Commerce, University of Saskatchewan, Saskatoon, Saskatchewan, Canada S7N 0W0.

UNIVERSITY OF SASKATCHEWAN. College of Commerce. Positions Available: Organizational Behaviour. Applications are invited for a full-time faculty position in the Department of Industrial Relations and Organizational Behaviour. Effective date of Appointment: July 1, 1980. Responsibilities: (1) Teaching at the undergraduate and graduate levels in Organizational Behaviour and, (2) research and publication. Co-ordinator, post position in Industrial Relations and Personnel Management. (2) Research leading to acceptable forms of publication. Qualifications: Candidates must hold a Ph.D. degree or be at the completion stage of a degree that has as its focus the study of Organizational Behaviour. Salary, research, and teaching experience in industrial relations and in the behavioural sciences would also be appropriate. Candidates having an established teaching and research record will be given preferred consideration. Rank and Salary Based on Academic Qualifications, including prior teaching experience, business experience, and research and publications record. Further information: Interested candidates should send resumes to: P.Y. Walmisley, Chairman, Department of Industrial Relations and Organizational Behaviour, College of Commerce, University of Saskatchewan, Saskatoon, Saskatchewan, Canada, S7N 0W0. Phone: (306) 343-4155.

UNIVERSITY OF SASKATCHEWAN. Department of Management and Marketing. One position, tenurable. Involves teaching duties in areas of Business Policy and Introductory Management. Research interests in development and management of small and medium-sized enterprises will be particularly welcome. Rank and Salary: depending on qualifications and experience. Qualifications: Doctorate completed or near completion in Management. Business experience will be an additional asset. Effective date of appointment: July 1, 1980. Contact: Dr. A.K. Sarkar, Head, Department of Management & Marketing, College of Commerce, University of Saskatchewan, Saskatoon, Saskatchewan, Canada S7N 0W0 Phone: (306) 343-3568.

SIMON FRASER UNIVERSITY. Department of Business Administration. 1. Three positions, each contingent on budgetary considerations. 2. Ph.D. in hand or near completion. 3. Duties include undergraduate and graduate teaching and research in any of the following: a) accounting/management information systems (assistant or associate rank); b) accounting (assistant or associate); c) organizational behavior (assistant); d) business and society (assistant or

associate); e) business policy (assistant or associate); f) management science (assistant); g) marketing (assistant). 4. Salaries commensurate with qualifications and experience. 5. Send curriculum vitae and names of three referees to: Dr. Wm. C. Wedley, Department of Business Administration, School of Business Administration and Economics, Simon Fraser University, Burnaby, B.C., V5A 1S6. 6. September 1, 1980.

ST. FRANCIS XAVIER UNIVERSITY. Department of Business Administration. Applications are invited for several positions in the Department of Business Administration for the 1980/81 academic year. Pending budgetary approval. Responsibilities include undergraduate teaching and research. Positions are available in the following teaching areas: finance, investments, marketing, organizational behaviour, introduction to business and management. The ability to teach in more than one area is desirable. Ph.D. or Ph.D. candidate or M.B.A. and relevant work experience. Rank and salary will be dependent upon qualifications and experience. St. Francis Xavier University is a Catholic educational institution of over 2,000 students located in Antigonish, an eastern Nova Scotia community with a population of 6,000. The university offers general, major and honours programs through departments in its faculty of Arts and Science. The university is a completely self sufficient community with residential, recreational and educational facilities to serve the needs of the student body. Interested candidates should forward a curriculum vitae and the name of three references to: Legault, Gerald, Department of Business Administration, St. Francis Xavier University, Antigonish, N.S.

TRENT UNIVERSITY. Administrative and Policy Studies Program. 1. Lecturer/Assistant Professor level. 2. M.B.A./Ph.D. or near completion. 3. Undergraduate teaching in at least two of the following areas: i) marketing, ii) accounting, iii) administration, iv) management science, v) corporate law. In addition the candidate will be expected to pursue his/her research interests. 4. Current Salary Floor, Lecturer, \$14,318 Assistant Professor, \$17,570. 5. Professor H.M. Kitchen, Director, Administrative and Policy Studies Program, Trent University, Peterborough, Ontario K9J 7B8. 6. July 1, 1980. 7. When position is filled.

WILFRID LAURIER UNIVERSITY. School of Business & Economics. Applications are invited for teaching positions in the areas of: Accounting, Marketing, Organizational Behaviour, Finance, Control & Information Systems and Business Policy for the 1980/81 teaching year. Qualifications: Ph.D. or Ph.D. candidates. Duties: including graduate and/or undergraduate teaching. Applications will be accepted until positions are filled, and are subject to budget approval. Send applications to: Dr. T.F. Cawsey, Ph.D., Associate Dean of Business, School of Business & Economics, Wilfrid Laurier University, Waterloo, Ontario Canada N2L 3C5.

UNIVERSITY OF VICTORIA. Faculty of Human & Social Development. Over the next three years, the School of Public Administration anticipates making several appointments, both visiting and continuing. These may be at any academic rank, though appointments at the assistant professor level may be preferred. Candidates selected will have a strong theoretical or analytical background in a substantive academic discipline, coupled with practical experience in public administration or policy analysis, especially at provincial or municipal levels. Labour relations and organizational analysis, financial management, and methods of policy analysis will be relevant specialties. A serious interest in teaching, both in the regular academic program and in diploma level or "outreach" programs designed for communities remote from the University will be essential. The rank is open. The salary is to be negotiated. Date of appointment: July 1, 1980 or later, subject to budgetary considerations. Closing date for applications for 1980/81 Academic Year: March 1, 1980. Applications are to be mailed to: Dean R.W. Payne, Faculty of Human & Social Development, University of Victoria, P.O. Box 1700, Victoria, B.C. V8W 2Y2.

COMMUNICATION STUDIES

CDCORDIA UNIVERSITY. Department of Communication Studies. Area: Film Production. Qualifications: Ph.D. or equivalent qualification preferred. Candidates should have experience in film production, as well as scholarly interest in a particular field such as writing, aesthetics, etc. Preference will be given to Canadian citizens or landed immigrants. Principal responsibilities: to conduct film seminar/practicum courses at the undergraduate and graduate-Diploma levels; to conduct courses in the candidate's particular field of additional competence. Rank: Assistant Professor (possibility of Associate Professor rank). Salary: Present floor, Assistant Professor: \$19,853. Appointment beginning: Academic year 1980-81. Applicants: Considered as received, closing date for receipt of applications: April 1, 1980. Send letter of Interest and curriculum vitae to: Personnel Committee, Department of Communication Studies, Concordia University, 7141 Sherbrooke St. West, Montreal, Quebec, H4B 1R6.

UNIVERSITY OF OTTAWA. Department of Communication. Rang académique: Négociable. Poste plein temps. Conditions: Doctorat ou l'équivalent. Expérience d'enseignement et de recherche. Publications et bilinguisme atouts majeurs. Fonctions: Enseignement en communication et communication appliquées. Recherche et publications. Traitement: Selon qualifications. Date d'entrée en fonctions: 1er Juillet 1980. Date limite pour les demandes: 1er Mars 1980. Adresser les demandes à: Dr. David Eley, Directeur de la Communication, Université d'Ottawa, Ottawa, Ont. K1N 6N5.

COMPUTER SCIENCE

UNIVERSITY OF SASKATCHEWAN. Department of Computational Science. 1. Position: Assistant Professor (2 positions). 2. Qualifications: Computer Science or a closely related discipline. Must have interest and background in one or more of: Systems analysis and design, business information systems, database, design, translator writing, software engineering, programming languages, artificial intelligence, operating systems, computer graphics, microcomputers. 3. Duties: Undergraduate and graduate teaching and research. 4. Salary: Determined by qualifications and experience. Apply to: Dr. J.E. Cooke, Head, Department of Computational Science, University of Saskatchewan, Saskatoon, Saskatchewan. 6. Effective date: July 1980. 7. Closing date: When position is filled.

SIMON FRASER UNIVERSITY. Computing Science Department. The Computing Science Department is seeking applicants for tenure track positions starting in September, 1980. A Ph.D. in Computing Science (or equivalent) is required with specialization in one or more of the following areas: Theoretical Science, Interactive Graphics, Software Engineering, Programming Languages and Compilers, Computer Design, Artificial Intelligence, Operating Systems and Systems Programming. Responsibilities will include teaching at the undergraduate and graduate levels, research, and the usual administrative activities. The department has an interactive graphics laboratory including an Evans and Sutherland picture system and also mini-computer, microprocessor, and hardware laboratories. The university has a central computing facility supporting both MTS and DS. Applications will be received until the positions are filled. To apply, send curriculum vitae and the names of three references to: Prof. James S. Weinman, Computing Science Department, Simon Fraser University, Burnaby, B.C. V5A 1S6. Telephone: (604) 291-4277. Please state the area(s) in which you are applying.

UNIVERSITY OF WINDSOR. School of Computer Science. Tenure track position in Computer Science. Applications are invited for a full-time tenure track appointment at the Assistant or Associate Professor level to begin July 1, 1980. A Ph.D. in Computer Science or related field is required. While preferences will be given to applicants who have a research interest in software design, operating systems and/or microcomputer systems, applicants from all areas of specialization within Computer Science will receive full consideration. Duties include teaching, research, and service to the university. Salary will be subject to negotiation and dependent on qualifications and experience. Applications should be submitted,

together with a curriculum vitae and the names and addresses of three referees by April 10, 1980 to: Dr. C.L. Sheng, Director, School of Computer Science, University of Windsor, Windsor, Ontario Canada N9B 3P4.

SIMON FRASER UNIVERSITY. Department of Computing Science. Simon Fraser University is seeking applications for the position of Chairman of the Department of Computing Science. The successful applicant will be expected to have demonstrated academic achievement in the general area of computing science and to be eligible for a senior academic appointment. Administrative experience would be an advantage. The salary and rank will be dependent on qualifications and the appointment will take effect September 1, 1980. Applications and nominations should be sent to: Dr. T.W. Calvert, Dean, Faculty of Interdisciplinary Studies, Simon Fraser University, Burnaby, B.C. V5A 1S6, from whom further information can be obtained.

LAKEHEAD UNIVERSITY. Department of Mathematical Sciences. The Department of Mathematical Sciences is seeking applications for a position at the rank of Associate Professor, to commence July 1, 1980. A Ph.D. in Computer Science (or equivalent) is required, with evidence of research ability or experience in the development of computer systems. The Department currently offers a three-year Bachelor's programme in computer science and plans to develop a four-year Honours programme. The applicant would be expected to participate in this development as well as teach courses in software, computer systems, and computer applications. Decision to be made by February 29, 1980. Please send applications indicating source of ad to: Donald E. Ayr, Secretary of the University of Lakehead, Thunder Bay, Ontario P7B 5E1.

UNIVERSITY OF LETHBRIDGE. Department of Mathematical Sciences. Computing Science. 1. One position at the Assistant Professor level subject to the availability of funding. 2. Ph.D. at or near completion. 3. Teaching undergraduate courses and research. 4. Salary Schedule (1978-79): Assistant Professor \$20,446-\$28,616. 5. Applications including a curriculum vitae, transcripts and three letters of reference, should be sent to: The Chairman, Department of Mathematical Sciences, University of Lethbridge, 4401 University Drive, Lethbridge, Alberta T1K 3M4. 6. Tenure track position. Probationary appointment for one year beginning 1 July 1980. 7. Closing date: Until position is filled.

CARLETON UNIVERSITY. Department of Systems Engineering & Computing Science. The Department of Systems Engineering and Computing Science is seeking faculty members, including visiting faculty, at the Assistant or Associate Professor level in the areas of digital systems architecture, computer communications, micro-processors, languages, operating systems, compilers, and associated hardware and software. Candidates must have a Ph.D. or equivalent, with suitable experience, and must be legally eligible to work in Canada. Appointments will be effective 1 July 1980. Applications should be addressed to: Chairman, Department of Systems Engineering and Computing Science, Carleton University, Ottawa, Ontario, Canada, K1S 5B6. Positions are subject to budgetary approval.

CREATIVE WRITING

UNIVERSITY OF VICTORIA. The Department of Creative Writing. The Department of Creative Writing, University of Victoria, has two seasonal appointments for the period September 1980 to 30 April 1981. Areas of expertise: drama, fiction, poetry or journalism. One position will concentrate on general writing workshops at the first year level; teaching experience and substantial publications will be required as well as the degree of MA or MFA. The second position will involve courses in journalism and publishing as well as expanding a co-operative education programme in these areas; the degree of Ph.D. plus at least five years of active experience will be required. For either position, the degree requirement may be waived for exceptional candidates with well-established, national reputations. Apply in writing with detailed curriculum vitae and names of two referees to: Writing, University of Victoria, Box 1800, Victoria, B.C., V8W 2Y2 by 1 March, 1980.

ECONOMICS

THE UNIVERSITY OF CALGARY. Department of Economics, invites applications from suitably qualified individuals for faculty positions commencing in the academic year 1980-81. Appointments may be full or part-time and of various durations. Applications from visiting scholars are particularly welcome, and no major field of economics is excluded. Rank and salary open and competitive. Applications containing a vitae and the names of three referees should be sent to: Dr. D.L. McLachlan, Head, Department of Economics, The University of Calgary, Calgary, Alberta T2N 1N4.

CDCORDIA UNIVERSITY. Department of Economics. Required consideration: a senior level position in the Department of Economics. Suitable candidate will also serve as the Director of the Institute of Applied Economic Research. Candidates with strong publication record and experience in various areas of applied economic research are invited to contact Professor B.S. Sahni, Chairman, Department of Economics, Concordia University, Montreal. (514) 879-5823.

CONCORDIA UNIVERSITY. Department of Economics. Possibility of two appointments at ranks commensurate with the candidate's qualifications. Applicants with main or secondary specialization in one or more of the following areas are invited to apply: General Theory, Industrial Relations, Labour Economics, and Economic History. Strong candidates in other areas will also be considered. Graduate and undergraduate teaching and supervision of Ph.D. dissertations. Salaries are fully competitive. Forward applications to: Dr. B. Sahni, Chairman, Department of Economics, Concordia University, 5141 Avenue Malsonneuve Blvd. West, Montreal, Quebec.

UNIVERSITY OF GUELPH. Department of Economics. Department of Economics, University of Guelph, seeks visiting professors for one year starting September 1, 1980. Rank and salary depend on qualifications. Candidates should have a Ph.D. and research and publication record and considerable teaching experience. Preferred fields include micro theory, industrial organization, international economics and development. But qualified persons with other interests will also be considered. Contact: J. Vanderkamp, Chairman, Department of Economics, University of Guelph, Guelph, Ontario. N1G 2W1. Positions subject to final budgetary approval.

McMASTER UNIVERSITY. Department of Economics, has one or more visiting positions at the assistant or associate professor rank for the 1980-81 academic year, commencing July 1, 1980. Applicants are normally expected to have a full-time continuing appointment at another institution. Applications including curriculum vitae and names of references should be sent to: Dr. J.A. Johnson, Chairman, Department of Economics, McMaster University, Hamilton, Ontario, L8S 4M4.

McMASTER UNIVERSITY. Department of Economics, has one or more junior positions commencing July 1, 1980, contingent on budgetary approval. Applications including curriculum vitae and names of references should be sent to: Dr. J.A. Johnson, Chairman, Department of Economics, McMaster University, Hamilton, Ontario, L8S 4M4.

McMASTER UNIVERSITY. Department of Economics, has an associate professor position commencing July 1, 1980. Candidates are expected to have a proven record of research and be qualified to supervise theses and teach in at least one of the following fields: economic theory, monetary economics, international economics, public finance and quantitative methods. Applications, including curriculum vitae and names of references should be sent to: Dr. J.A. Johnson, Chairman, Department of Economics, McMaster University, Hamilton, Ontario L8S 4M4.

UNIVERSITY OF NEW BRUNSWICK. Department of Economics. Applications are invited for a position of Lecturer or Assistant Professor, July 1, 1980. Ph.D. or equivalent. Duties include graduate and undergraduate teaching and research interest in macrotheory. Salary under negotiation. Send curriculum vitae and names of three referees to: Professor C.M. Waddell, Chairman, Department of Economics, P.O. Box 4400, Fredericton, New Brunswick, E3B 5A3.

UNIVERSITY OF NEW BRUNSWICK. Department of Economics. Applications are invited for a position (rank depends on experience) July 1, 1980. Ph.D. or wide prac-

tical experience. Duties — graduate and undergraduate teaching, and research interest in regional Economics. Salary under negotiation. Send curriculum vitae and names of three referees to: Professor C.M. Waddell, Chairman, Department of Economics, P.O. Box 4400, Fredericton, New Brunswick, E3B 5A3.

SCARBOROUGH COLLEGE, UNIVERSITY OF TORONTO. Economics. Subject to approval, a tenure-stream position at the Assistant Professor level, to begin July 1, 1980. Fields of research or preference will be given to candidates in macroeconomics and econometrics. Salary is competitive. A Ph.D. is required and a strong interest in research is essential. Teaching responsibilities are largely undergraduate, although the opportunity exists to participate in the University's graduate programme. Applications, with a curriculum vitae and the names of three referees should be sent to: Professor Morley Gunderson, Economics, Scarborough College, West Hill, Ontario, M1C 1A4. Closing date: February 29, 1980.

SAINT MARY'S UNIVERSITY. Department of Economics. Applications are invited for a position in the Department of Economics. Rank is open; Ph.D. preferred. Duties will consist of undergraduate teaching in Principles of Economics, plus one or more of the following areas: Labour, Human Resource, Regional Economics and Public Finance. Salary is competitive. Effective date of appointment is September 1, 1980. Applications will be received until position is filled. Enquiries should be sent to: Dr. J. Vorstermans, Acting Chairman, Department of Economics, Saint Mary's University, Halifax, Nova Scotia, B3H 3C3.

ST. FRANCIS XAVIER UNIVERSITY. Department of Economics. The Department of Economics has two vacancies at the Assistant Professor level. Applicants for these positions should have a doctorate or be near completion. Responsibilities include undergraduate teaching of economic principles and any two of the following: Labour and Human Resources, Economic Theory, Resource Economics, Public Finance, Urban Economics, Econometrics, Macroeconomics, History of Economic Thought, and Economic Development. Applicants are invited to submit their curriculum vitae with names of references to: Dr. J. Laudadio, Chairman, Department of Economics, St. Francis Xavier University, Antigonish, Nova Scotia, B2G 1C0.

UNIVERSITY OF VICTORIA. Department of Economics. Applications are invited for a one or two year visiting appointment in the areas of microeconomics, macroeconomics, comparative systems, natural resources at the Associate or Professor level effective July 1, 1980. Duties will include undergraduate and/or graduate teaching. Applications should be received before March 1, 1980 to: Dr. J. Laudadio, Chairman, Department of Economics, University of Victoria, P.O. Box 1700, Victoria, B.C., V8W 2Y2.

EDUCATION

THE UNIVERSITY OF ALBERTA. Department of Educational Psychology. Applications are invited for a position in the Department of Educational Psychology at the Assistant Professor level (salary \$19,320 p.a.). Duties will involve teaching in a large, comprehensive undergraduate/graduate program. Candidates should have a completed doctorate, a teaching certificate, practical experience, a demonstrated applied research program and skill in working with children with mild handicapping conditions, at the early childhood, elementary and/or secondary levels. Applications, including a current curriculum vitae and names of referees should be sent to: Dr. Harvey Zingle, Chairman, Department of Educational Psychology, University of Alberta, Edmonton, Alberta, Canada, T6G 2G5. Applications accepted until the position is filled. Appointment effective July 1, 1980. This position is open to both males and females.

AUSTRALIA. Science Education. One year teaching exchange near Melbourne with counterpart in Science Education. Primary teaching responsibilities would likely involve curriculum courses for primary and secondary teachers. Please contact Mr. Graham Detrick, Gippsland Institute of Advanced Education, Switchback Road, Churchill, Victoria 3842, Australia.

CONCORDIA UNIVERSITY. Department of Education. Invites applications for two

faculty positions in Early Childhood Education (one regular and one leave replacement) anticipated for 1990. Qualifications required are Ph.D. with research interests in one or more of the following: teaching, learning, environment, curriculum, child development (0-8 years). Responsibilities include teaching at undergraduate and graduate levels, supervision of teaching practice and supervision of theses. Effective date June 1, 1990 or as soon as possible after that date. Salary negotiable, based on experience and qualifications. Applications with curriculum vitae and names of referees should be submitted to: Arpi Hamalian, Chairman, Department of Education, Concordia University, 1455 de Maisonneuve Blvd. West, Quebec, Canada H3G 1M8.

CONCORDIA UNIVERSITY. Department of Education. Invites applications for a faculty position at the Assistant or Associate rank, in the area of Social and Psychological Foundations of Education. Qualifications required are a Ph.D. or equivalent with active research and teaching interests in one or more of the disciplines and areas related to the Social and Psychological Foundations of Education. French/English bilingual is an advantage. Responsibilities include teaching at the undergraduate and graduate levels, research and development, thesis supervision. Salary negotiable based on experience and qualifications. The position is to be filled as soon as possible. Applications with curriculum vitae and names of referees should be submitted to: Arpi Hamalian, Chairman, Department of Education, Concordia University, 1455 de Maisonneuve Blvd., West, Montreal, Quebec, Canada H3G 1M8.

UNIVERSITY OF MANITOBA. Department of Educational Administration and Foundations. The Department of Educational Administration and Foundations at the University of Manitoba may have a position in educational administration available, commencing July 1 or September 1, 1990. This position is subject to budget approval. The appointment will be at the assistant or associate professor level and will be for a one year period, with the possibility of renewal. Duties will include undergraduate and graduate instruction, involvement in the field of activities of the department and research. Ph.D. is important. It is the policy of the University of Manitoba to give preference to those who are Canadian citizens or who are landed immigrants at the time of application unless other applicants have clearly superior qualifications. Both men and women are invited to apply. Send applications, a complete curriculum vitae and the names of three referees to J. A. Riffel, Head, Department of Educational Administration and Foundations, University of Manitoba, Winnipeg, Canada R3T 2N2.

UNIVERSITY OF MANITOBA. Department of Educational Administration and Foundations. The Department of Educational Administration and Foundations at the University of Manitoba may have a position in cross cultural studies available, commencing July 1 or September 1, 1990. This position is subject to budget approval. The appointment will be at the assistant or associate professor level and will be for a one year period, with the possibility of renewal. Duties will include undergraduate and graduate instruction, involvement in the field of activities of the department and research. Ph.D. is important. It is the policy of the University of Manitoba to give preference to those who are Canadian citizens or who are landed immigrants at the time of application unless other applicants have clearly superior qualifications. Both men and women are invited to apply. Send applications, a complete curriculum vitae and the names of three referees to J. A. Riffel, Head, Department of Educational Administration and Foundations, University of Manitoba, Winnipeg, Canada R3T 2N2.

MEMORIAL UNIVERSITY OF NEWFOUNDLAND. Institute for Educational Research and Development. Associate Professor, Educational Research. Applications are invited for a tentative senior research appointment. Applicants should be established researchers, preferably with experience in educational policy studies. Duties involve initiation and conduct of research on policy related problems, primarily in the context of the Newfoundland educational system. Ph.D. in sociology of education, educational administration, research methods, or a related field is required. Salary negotiable. Appointment effective July 1, 1990, subject to final budget decisions. Apply to Dr. R. K.

Crocker, Director, Institute for Educational Research and Development, Memorial University of Newfoundland, St. John's, Newfoundland.

UNIVERSITY OF NEW BRUNSWICK. Faculty of Education, Science Education. A faculty member is required at the level of Assistant or Associate Professor to teach primarily undergraduate but some graduate courses in Science Education. These courses are designed for students preparing to teach or teaching in both Elementary and Secondary schools. The appointment would be on a tenure track beginning July 1, 1990. Completed doctorate in Science Education would be preferred with some school experience. Salary and benefits will be in accordance with regular U.N.B. scales which are presently under negotiation. Submit c.v. and the names of three referees to: Dr. Marian Small, Chairman, Division of Curriculum & Instruction, Faculty of Education, University of New Brunswick, P.O. Box 4400, Fredericton, N.B. E3B 5A3. The appointment is subject to budget allocation.

SIMON FRASER UNIVERSITY. The Faculty of Education. The Faculty of Education at Simon Fraser University has openings for sessional instructors for undergraduate teaching during the Summer Semester (May to August), intercession (May and June), and Summer Session (July and August) of 1990. Teaching interests should be in the following areas: Designs for Learning: Reading, Music, Art, Physical Education, Mathematics, Social Sciences. Natural Sciences are English, Educational Media, Cultural Differences and Education, Early Childhood Education, Children's Literature, Environmental Education, Curriculum Development, Learning and Evaluation, Educational Theory and Theory Criticism, Learning Disabilities, Analysis of Teaching, Contemporary Issues in World Education, Ethics and Education, Classroom Management and Discipline. All positions are subject to budgetary constraints. Please reply with curriculum vitae and the names of three referees to: Dr. Martin F. Wilder, Director, Undergraduate Programs, Faculty of Education, Simon Fraser University, Burnaby, B.C. V5A 1S6. Applications will be accepted until February 29, 1990.

UNIVERSITY OF ALBERTA. Department of Secondary Education. Professor or Associate Professor level. 2. Doctoral degree. Experiences in graduate level instruction in the social sciences and in education, particularly dealing with school curriculum. 3. Duties: provide instruction in advanced graduate courses Ed. C. I. 598 Conference Seminar: Phenomenology of Social Relations and Curriculum 1, and Ed. C. I. 698 Conference Seminar: Phenomenology of Social Relations and Curriculum 11. 4. Summer Session stipend for professor plus travel grant. 5. M. T. Aoki, Chairman, Department of Secondary Education, University of Alberta, Edmonton, Alberta T6G 2G5. 6. July 7 - August 15, 1990.

CONCORDIA UNIVERSITY. Department of Education. The Department of Education at Concordia University-Montreal has openings for sessional lecturers for graduate and undergraduate courses in the Special Summer Sessions. Teaching interests should be in the following areas and time periods: For Evening courses May 12 - June 10: Children's Behavior Problems, Education in Quebec, Current Issues in Education, Planning and Producing Audio-Visual Materials, Curriculum Development, Curriculum Development for Continuous Education, Adult Education in Canada, Nature and Function of Teaching (until July 17). For Evening courses June 16 - July 17: For problems of Children, Small Computer Systems in Education, The Teaching/Learning Process in Adult Education (until July 22). For Day courses July 2 - August 12: Psychology of Education, Introduction to the Philosophy of Education, Sociology of Education, Introduction to Adult and Continuing Education. For Day courses July 2 - July 22: Instructional Systems for Analysis, Educational Simulation and Gaming, Management of Learning Resources Special Topics Seminar in Adult Education. Applications with curriculum vitae, course of interest, and the names of three referees should be addressed to: Dr. Richard F. Schmid, Director, Summer Session in Education, Department of Education, Concordia University, 1455 Blvd. de Maisonneuve ouest, Montreal, P.Q. H3G 1M8. Applications deadline: March 15, 1990.

UNIVERSITY OF MANITOBA. The Department of Educational Administration and Foundations may have a position in cross cultural studies available, commencing July

1 or September 1, 1990. This position is subject to budget approval. The appointment will be at the assistant or associate professor level and will be for a one year period, with the possibility of renewal. Duties will include undergraduate and graduate instruction, involvement in the field of activities of the department and research. Ph.D. is important. It is the policy of the University of Manitoba to give preference to those who are Canadian citizens or who are landed immigrants at the time of application unless other applicants have clearly superior qualifications. Both men and women are invited to apply. Send applications, a complete curriculum vitae and the names of three referees to J. A. Riffel, Head, Department of Educational Administration and Foundations, University of Manitoba, Winnipeg, Canada, R3T 2N2.

UNIVERSITY OF MANITOBA. The Department of Educational Administration and Foundations may have a position in educational administration available, commencing July 1 or September 1, 1990. This position is subject to budget approval. The appointment will be at the assistant or associate professor level and will be for a one year period, with the possibility of renewal. Duties will include undergraduate and graduate instruction, involvement in the field of activities of the department and research. Ph.D. is important. It is the policy of the University of Manitoba to give preference to those who are Canadian citizens or who are landed immigrants at the time of application unless other applicants have clearly superior qualifications. Both men and women are invited to apply. Send applications, a complete curriculum vitae and the names of three referees to J. A. Riffel, Head, Department of Educational Administration and Foundations, University of Manitoba, Winnipeg, Canada, R3T 2N2.

UNIVERSITY OF ALBERTA. Department of Educational Foundations. The Department of Educational Foundations at the University of Alberta invites applications for the following 1990 Summer Session appointment: An instructor for the following two courses: 1) Senior undergraduate course in philosophy of education. 2) A graduate course in the philosophy of education focusing on existentialism and phenomenology. Letters of application together with appropriate documentation should be sent to: Dr. P. J. Miller, Chairman, Department of Educational Foundations, Faculty of Education, University of Alberta, Edmonton, Alberta T6G 2G5.

UNIVERSITY OF SASKATCHEWAN. Department of Educational Foundations. Applications and nominations are invited for the position of Head of the Department of Educational Foundations in the College of Education at the University of Saskatchewan. The effective date of the appointment will be July 1, 1990. Nominations, including reasons for nominating, should be received by February 15, 1990. Applications should be received by February 29, 1990, and should include curriculum vitae, teaching experience at the elementary or secondary level, academic expertise in philosophy and/or sociology of education, and evidence of scholarly achievement. Rank and salary will depend on qualifications. Nominations and applications should be sent to Dean Robin H. Farquhar, College of Education, University of Saskatchewan, Saskatoon, S7N 0W0.

MCGILL UNIVERSITY. Department of Social Foundation of Education. McGill University Faculty of Education: Department of Social Foundations of Education. Visiting Professor for summer session only teach graduate course in Comparative Study of Education in Developing Nations. July 2 to July 29, 1990, two hours per day. Rank open; summer session salary scales. Doctorate preferred. Please send curriculum vitae to Dr. Margaret Gillett, Chairperson, Department of Social Foundations, Faculty of Education, McGill University, 3700

Closing date for applications: March 4, 1990.

EDUCATIONAL PSYCHOLOGY

UNIVERSITY OF ALBERTA. Department of Educational Psychology. Applications are

invited for a position in the Department of Educational Psychology at the Assistant Professor level (Salary \$19,320 p.a.). Duties will involve teaching in a large, comprehensive Undergraduate/Graduate program. Candidates should have a completed doctorate, a teaching certificate, practical experience, a demonstrated applied research program and skill in working with children with mild handicapping conditions, at the early childhood, elementary and/or secondary levels. Applications, including a current curriculum vitae and names of referees should be sent to Dr. Harvey Zingale, Chairman, Department of Educational Psychology, University of Alberta, Edmonton, Alberta, Canada, T6G 2G5. Application deadline: until position is filled. Appointment desired for 1990/91 academic year. This position is open to both males and females.

UNIVERSITY OF ALBERTA. Department of Educational Psychology. Positions open for Associate Professor and Assistant Professor in Education of the Hearing Impaired. Applicants must have undergraduate and graduate training in this area. Ph.D. completed, extensive university teaching and practical experience as well as demonstrated research. These are tenure route positions; major responsibility will be to design and implement a new graduate program as well as to train teachers and other specialist personnel working with the hearing impaired. This program will be complementary to an existing comprehensive undergraduate and graduate special education program. Employment will commence July 1, 1990, or as soon as suitable applicants are found. These positions are open to both male and female applicants. Applications including a current curriculum vitae and names of referees should be sent to Dr. H.W. Zingale, Chairman, Department of Educational Psychology, The University of Alberta, Edmonton, Alberta, Canada T6G 2G5.

ENGINEERING/ APPLIED SCIENCE

CARLETON UNIVERSITY. Department of Civil Engineering. Applications are invited for positions at either the assistant or associate professor rank to teach in the area of structural engineering and building design & construction, commencing September, 1990. Applicants should hold a Ph.D. degree and have suitable teaching, research and industrial experience. Duties include teaching at both the undergraduate and graduate levels, together with related research. Enquiries and applications should be sent to Professor John Adejele, Chairman, Department of Civil Engineering, Carleton University, Ottawa, Ontario before March 15, 1990. Positions are subject to budgetary approval.

CARLETON UNIVERSITY. Department of Mechanical and Aeronautical Engineering. Two temporary openings exist at the Assistant or Associate Professor level, for a one year term. The successful applicants will have an interest in either Applied Thermodynamics, Fluid Mechanics or Aeronautics and will be required to teach at both undergraduate and graduate levels and participate in the research activities of the department. Applications with C.V. and names of three referees should be sent to Dr. H.H. Saravanamuttoo, Chairman, Mechanical and Aeronautical Engineering, Carleton University, Ottawa, Ontario, Canada, K1S 5B6. Positions are subject to budgetary approval.

CONCORDIA UNIVERSITY. Mechanical Engineering Department. Research Associate-Postdoctoral Research in Applications of Finite Element Methods to Transonic Flows in Turbomachinery. Full-time position. Experience in Finite Elements in Flow Problems and Turbomachinery experience an asset. Competitive salary. Send complete curriculum vitae and references to Professor W.G. Habashi, Mechanical Engineering Department, H-929, Concordia University, 1455 de Maisonneuve Blvd. West, Montreal, P.Q. Canada H3G 1M8.

MEMORIAL UNIVERSITY OF NEWFOUNDLAND. Faculty of Engineering and Applied Science. Applications are invited for the position of Assistant Professor to

teach undergraduate students. Qualifications expected are Ph.D. in Engineering or Applied Mathematics with an engineering background or academic qualifications which are suitably equivalent. Salary depen-

<p>dent on qualifications and experience. Position is immediate and applications, with curriculum vitae, and the names of three referees should be directed to: Dr. R.T. Dempster, Dean, Faculty of Engineering and Applied Science, Memorial University of Newfoundland, St. John's Newfoundland, A1B 3X5.</p> <p>THE UNIVERSITY OF MANITOBA. Department of Geological Engineering. Geological/Civil Engineering. 1. Assistant Professor, consideration may be given to Associate Professor. 2. Ph.D. or equivalent with consideration given to experience in the applications of rock mechanics to Geological and/or Civil Engineering works. 3. Graduate and undergraduate teaching and research in Geotechnical/Rock Engineering. 4. Dependent on qualifications. 5. Head, Department of Geological Engineering, University of Manitoba, Winnipeg, Manitoba R3T 2N2. 6. September 1, 1980. 7. When position filled.</p>	<p>date of appointment: July 1, 1980. Contact: Dean P. Michael Maher, Ph.D., College of Commerce, University of Saskatchewan, Saskatoon, Saskatchewan, Canada S7N 0W0.</p> <p>SALIN MARY'S UNIVERSITY. Department of Finance and Management Science. Applications are invited for two positions beginning September, 1980 in the area of Finance. Candidates should have Ph.D. or D.B.A. in hand, or near completion. Research activity and publication is expected, and a background in insurance and/or real estate is desirable. Rank and salary depend on qualifications. Send resume to: Dr. Milton C. Chew, Chairman, Department of Finance and Management Science, Saint Mary's University, Halifax, Nova Scotia, Canada B3H 3C3.</p>	<p>GENETICS</p> <p>THE UNIVERSITY OF ALBERTA. Department of Genetics. Molecular Geneticist. The Department of Genetics, University of Alberta, invites applications for a tenure track appointment at the Assistant Professor level. The successful candidate will be expected to develop an active research programme using molecular approaches to genetic problems in either eukaryotes or prokaryotes. The appointee will participate in undergraduate and graduate teaching. Applicants are asked to submit a curriculum vitae, publication list and the names and addresses of three referees, before March 15, 1980. In addition, applicants are asked to arrange for these referees to send confidential assessments to: R.C. von Borstel, Department of Genetics, University of Alberta, Edmonton, Alberta, Canada, T6G 2E9. (The University of Alberta is an equal opportunity employer).</p> <p>THE UNIVERSITY OF ALBERTA. Department of Genetics. Applications are invited for a full-time position of Biology Technologist III or IV, depending on experience, starting December 15, 1979. The successful applicant will be expected to principally supervise a level "C" (MRC, Canada) permanent facility and to participate in the development of recombinant DNA research in collaboration with Faculty and Graduate Student members of the Department of Genetics. A more detailed description of duties can be obtained on application to Personnel Services and Staff Relations, University of Alberta, Edmonton, Alberta, T6G 2J7.</p>	<p>the Ultra-Sensitive Analysis Facility. This facility, incorporating ion microprobe, DC accelerator and mass spectrometer is being set up jointly by the Departments of Physics and Geology. The applicant should have a geological background, competence in physics, and a familiarity with instrumental methods of analysis of rocks and minerals, preferably including mass spectrometry. Duties will be to participate in the establishment of the laboratory, and in the development of geochronological and ultra-low level trace element analytical methods. The appointment will be for a maximum period of three years. Salary will be based on NSERC post-doctoral rates. Send resume and names of two referees to: Professor D.W. Strangway, Department of Geology, University of Toronto, Toronto, Ontario, M5S 1A1.</p> <p>MEMORIAL UNIVERSITY OF NEWFOUNDLAND. Department of Geology. A Post-Doctoral Fellowship is available for research on ophiolite emplacement mechanisms and mélange development. The successful applicant will have had previous field experience in such geological terrains and will be required to participate in a study of Appalachian-Caledonian ophiolites with Dr. J.G. Malpas and Dr. R.K. Stevens. Limited teaching duties may also be required. The appointment will be effective 1 June 1980 at a salary of \$12,900 and will be for one year in the first instance, but with opportunity for extension. Applications, including a curriculum vitae and the names and addresses of two referees, should be sent by 1 March 1980 to: Head, Department of Geology, Memorial University of Newfoundland, St. John's, Newfoundland, Canada A1B 3X5.</p>
<p>ENVIRONMENTAL STUDIES</p> <p>BROCK UNIVERSITY. Institute of Urban and Environmental Studies. Applications are invited for a two-year appointment at the Lecturer level beginning July 1, 1980. Duties include teaching undergraduates in both urban and environmental studies, and some administrative responsibilities. Qualifications: Ph.D. or ABD in Urban and/or Environmental Studies or equivalent experience. Preference will be given to those with experience in Environmental Studies. Salary dependent upon qualifications and experience. Forward c.v. with letter of application and names of three references to: Dr. William A. Matheson, Acting Director, Institute of Urban and Environmental Studies, Brock University, St. Catharines, Ontario L2S 3A1.</p>	<p>UNIVERSITY OF ALBERTA. The Department of Drama. The Department of Drama at the University of Alberta has a vacancy for a scholar-teacher at the assistant professor rank which will be available July 1, 1980 (funds permitting). This is a tenure stream position in the Division of Academic Studies with responsibilities in the areas of theatre history, dramatic literature and criticism. The appointee will be expected to work on both the undergraduate and graduate level and should have a Ph.D., prior university teaching experience and some publication. The salary is negotiable within an anticipated scale of \$19,500-\$25,400. Please send applications including an updated curriculum vitae and at least three letters of reference to: Dr. James H. McTeague, Chairman, Department of Drama, University of Alberta, Edmonton, Alberta T6G 2C9. The University of Alberta is an equal opportunity employer.</p>	<p>GEOGRAPHY</p> <p>YORK UNIVERSITY. Department of Geography, Assistant Professor. Contractually limited appointment for one or possibly two years beginning Fall 1980, subject to budgetary approval. Ph.D. required. Physical geographer with primary interest in climatology. Send vitae and names of three referees. Apply: James R. Gibson, Chairman, Department of Geography, York University, 4700 Keele Street, Downsview, Ontario, Canada, M3J 1P3.</p> <p>SIMON FRASER UNIVERSITY. Department of Geography. Applications are invited for a Visiting Position, at the rank of either Assistant or Associate Professor in physical geography for the Fall Semester, 1980 and the Spring Semester, 1981. Applicants will be expected to teach one introductory course and one advanced geomorphology course per semester (details on application). The salary will be commensurate with rank and experience. Send curriculum vitae and the names of at least three potential referees to: Dr. Michael C. Roberts, Chairman, Department of Geography, Simon Fraser University, Burnaby, B.C., V5A 1S6. Telephone: (604) 291-3748. Closing date for applications is March 31, 1980.</p>	<p>GERONTOLOGY</p> <p>MOUNT SAINT VINCENT UNIVERSITY. Gerontology. Mount Saint Vincent University invites applications for a position in Gerontology. This will be a cross-appointment between the gerontology programme and one of the other social science disciplines, preferably psychology. Responsibilities will be to teach undergraduate courses in gerontology and to develop and undertake an active research programme. Preference will be given to candidates with a Ph.D. in a relevant discipline. Rank and salary will be in accordance with qualifications and experience. Send curriculum vitae and the names of three referees to: Dr. Susan Clark, Dean of Humanities and Professional Development, Mount Saint Vincent University, Halifax, Nova Scotia, B3M 2J6. The appointment will be effective July 1, 1980.</p>
<p>FINANCE</p> <p>CONCORDIA UNIVERSITY. Department of Finance. Finance, starting June 1, 1980, or later. Fulltime, Visiting or Tenure track positions. Teaching Finance at undergraduate and/or graduate level. Preferred areas include Corporate Finance, Theory, Capital Markets and Institutions, Risk and Insurance, and Real Estate Finance. Ph.D. or A.B.D. in Finance required, rank and salary competitive. Distribution of workload over teaching, research, and administrative duties to reflect your preferences. Large Department and stimulating work environment. Have CRSP and other data files apply with current vitae, names of three referees and graduate transcripts to: Dr. E.J. Douglas, Chairman, Department of Finance, Concordia University, 1455 de Maisonneuve Blvd. West, Montreal, Quebec, Canada, H3G 1M8.</p> <p>UNIVERSITY OF TORONTO. Department of Political Economy. Finance. 1. Assistant Professor, Finance. In the tenure stream. 2. Ph.D. in hand or near completion. 3. Teaching undergraduate and graduate courses in Finance, strong research interests. 4. Competitive. 5. Professor George Leonidas, Director of Commerce and Finance, Department of Political Economy, University of Toronto, 100 St. George Street, Toronto, Ontario, Canada M5S 1A1. 6. July 1, 1980. 7. When position filled.</p>	<p>UNIVERSITY OF ALBERTA. The Department of Drama. The Department of Drama at the University of Alberta has a vacancy for a scholar-teacher at the assistant professor rank which will be available July 1, 1980 (funds permitting). This is a tenure stream position in the Division of Academic Studies with responsibilities in the areas of theatre history, dramatic literature and criticism. The appointee will be expected to work on both the undergraduate and graduate level and should have a Ph.D., prior university teaching experience and some publication. The salary is negotiable within an anticipated scale of \$19,500-\$25,400. Please send applications including an updated curriculum vitae and at least three letters of reference to: Dr. James H. McTeague, Chairman, Department of Drama, University of Alberta, Edmonton, Alberta T6G 2C9. The University of Alberta is an equal opportunity employer.</p> <p>BRDCK UNIVERSITY. Department of Drama and Film Studies. Applications are invited for a faculty position in theatre practice at the rank of assistant or associate professor. The successful candidate will be responsible for directing one of the department's major productions and for teaching courses in at least two of the following areas: introductory theatre practice, acting, directing, playwriting, drama in education. Academic and theatre experience would be desirable. For July 1, 1980. Applications, with curriculum vitae and the names of three referees, should be sent by March 1, 1980 to: Dr. James Leach, Chairman, Department of Drama and Film Studies, Brock University, St. Catharines, Ontario, L2S 3A1.</p>	<p>GEOLOGY</p> <p>UNIVERSITY OF TORONTO. Department of Geology. We are inviting applications for a two-year postdoctoral fellowship in structural geology at the University of Toronto. Applicants should be familiar with modern analytical methods, particularly paleostress analysis, and have some field experience in metamorphic terrains. For further information, contact W.M. Schwedert, Department of Geology, University of Toronto.</p> <p>UNIVERSITY OF TORONTO. Department of Geology. Applications are invited for the position of Research Associate to work with</p>	<p>HEALTH CARE ADMINISTRATION</p> <p>UNIVERSITY OF SASKATCHEWAN. Department of Industrial Relations and Organizational Behaviour. Positions available: Health Care Administration. Applications are invited for a full-time faculty position in the Health Care Administration specialty, in the Department of Industrial Relations and Organizational Behaviour. Effective date of appointment: July 1, 1980. Responsibilities: (1) Teaching at the graduate, undergraduate and certificate levels. (2) Research leading to acceptable forms of publication. (3) Supervision of students. (4) Other duties. Qualifications: Candidates should hold or be near the completion stage of a Doctorate level degree in a field of study related to health care administration. Candidates with experience and specific formal training in health care field will be given preference. Rank and salary based on academic qualifications and past experience. Further Information: Interested candidates should send resumes to: Professor P.Y. Walmsey, Chairman, Department of Industrial Relations and Organizational Behaviour, College of Commerce, University of Saskatchewan, Saskatoon, Saskatchewan, Canada S7N 0W0 Phone: (306) 343-4165.</p>
<p>UNIVERSITY OF SASKATCHEWAN. College of Commerce. One tenurable position in Finance. Rank and salary: Depending upon academic qualifications and experience of the candidate. Qualifications: Doctorate completed, or nearing completion, in Finance. A strong potential for research is required. Teaching at the graduate and undergraduate courses in Corporate Finance, Financial Institutions, Investments, Insurance, and International Finance. Effective date of appointment: July 1, 1980. Contact: Dean P. Michael Maher, Ph.D., College of Commerce, University of Saskatchewan, Saskatoon, Saskatchewan, Canada S7N 0W0.</p> <p>UNIVERSITY OF SASKATCHEWAN. College of Commerce. One or two Limited Term Positions in Finance. Qualifications: A Master's Degree in Business Administration with concentration in Corporate Finance. Ability to teach undergraduate classes is desirable. Preference will be given to persons who are interested in pursuing their education leading to a doctorate in Finance. Rank: Instructor, Lecturer, or Assistant Professor, depending upon the qualifications of the candidate. Effective</p>	<p>UNIVERSITY OF ALBERTA. The Department of Drama. The Department of Drama at the University of Alberta has a vacancy for a scholar-teacher at the assistant professor rank which will be available July 1, 1980 (funds permitting). This is a tenure stream position in the Division of Academic Studies with responsibilities in the areas of theatre history, dramatic literature and criticism. The appointee will be expected to work on both the undergraduate and graduate level and should have a Ph.D., prior university teaching experience and some publication. The salary is negotiable within an anticipated scale of \$19,500-\$25,400. Please send applications including an updated curriculum vitae and at least three letters of reference to: Dr. James H. McTeague, Chairman, Department of Drama, University of Alberta, Edmonton, Alberta T6G 2C9. The University of Alberta is an equal opportunity employer.</p> <p>BRDCK UNIVERSITY. Department of Drama and Film Studies. Applications are invited for a faculty position in theatre practice at the rank of assistant or associate professor. The successful candidate will be responsible for directing one of the department's major productions and for teaching courses in at least two of the following areas: introductory theatre practice, acting, directing, playwriting, drama in education. Academic and theatre experience would be desirable. For July 1, 1980. Applications, with curriculum vitae and the names of three referees, should be sent by March 1, 1980 to: Dr. James Leach, Chairman, Department of Drama and Film Studies, Brock University, St. Catharines, Ontario, L2S 3A1.</p> <p>SIMON FRASER UNIVERSITY. Fine & Performing Arts Department. Two film position. Simon Fraser University has a vacancy to make two faculty appointments in film. One of these will be a continuing tenure-track appointment with an initial contract of three years, at the rank of associate or assistant professor. The other appointment will be as a visiting assistant professor for a one or two year term. Both positions will involve teaching in a production-centred film program. The two individuals will together be responsible for introducing students to the film medium, teaching fundamentals of the craft and guiding student productions in 16 mm format. Dual qualifications for both positions should include substantial professional experience and a demonstrated ability to teach the craft of film at all levels. Candidates should be prepared to accept faculty responsibilities within an interdisciplinary Fine & Performing Arts Department. Duties to begin September 1, 1980. Letters of application should be sent to: Professor Evan Alderson, Director, Centre for the Arts, Simon Fraser University, Burnaby, British Columbia V5A 1S6.</p> <p>SIMON FRASER UNIVERSITY. Fine & Performing Arts Department. Simon Fraser University expects to make a faculty appointment in dance at the rank of assistant professor effective September, 1980. Primary responsibilities are to teach all levels of contemporary dance techniques, improvisation, and composition in a recently approved dance major program within an interdisciplinary fine & performing arts department. Qualifications should include substantial professional teaching and performing experience. University degrees and additional qualifications in dance related academic areas are desirable but not essential. Salary base: \$19,720. Letters of application should be sent to Professor Evan Alderson, Director, Centre for the Arts, Simon Fraser University, Burnaby, British Columbia, V5A 1S6.</p>	<p>GEOLOGY</p> <p>UNIVERSITY OF TORONTO. Department of Geology. We are inviting applications for a two-year postdoctoral fellowship in structural geology at the University of Toronto. Applicants should be familiar with modern analytical methods, particularly paleostress analysis, and have some field experience in metamorphic terrains. For further information, contact W.M. Schwedert, Department of Geology, University of Toronto.</p> <p>UNIVERSITY OF TORONTO. Department of Geology. Applications are invited for the position of Research Associate to work with</p>	<p>INDUSTRIAL DESIGN</p> <p>CARLETON UNIVERSITY. School of Industrial Design. Applications are invited for a two-year term July 1, 1980 to June 30, 1982 position of Assistant Professor in the</p>

School of Industrial Design at Carleton University. Teaching duties may include courses in Visual Communications, Design Fundamentals, and Product Design Studios. Candidates should have an academic background in industrial design, and experience in industrial design profession and industrial design education. Salary will depend on qualifications. Applications should include a curriculum vitae with a description of professional and educational career, and should be submitted before March 1, 1980 to George A. Lynn, Acting Director, School of Industrial Design, Carleton University, Ottawa, Ontario, K1S 5B6. Position subject to budgetary approval.

CARLETON UNIVERSITY. School of Industrial Design. Applications are invited for a nine-month term (August 15, 1980 to May 15, 1981) position of Associate Professor in the School of Industrial Design at Carleton University. Teaching duties will include the first-year design studio in the School of Architecture and one course in the School of Industrial Design. Candidates should have an academic background in architecture and/or industrial design, and experience in architecture and/or industrial design, design and education. Salary will depend on qualifications. Applications should include a curriculum vitae with a description of professional and educational career, and should be submitted before March 1, 1980 to George A. Lynn, Acting Director, School of Industrial Design, Carleton University, Ottawa, Canada, K1S 5B6. Positions subject to budgetary approval.

LAND RESOURCE SCIENCE

UNIVERSITY OF GUELPH. Department of Land Resource Science, Research Scientist in Crop/Land Productivity Modelling. Date available: Immediately. Three year appointment on grant funds. Applicants should have a Ph.D. in Agronomy, Agronomy, Agronomy, Soil Science or related fields with experience in simulation modelling and computer programming. Responsibilities include evaluation and modification of existing simulation models for estimating crop production in the climate/soil system of Ontario and assistance with field studies as required for the models. It is expected that the appointment will be at the Scientist 3 rank (\$18,800 minimum). Applicants should send curriculum vitae and names of three referees to: Dr. K.M. King, Chairman, Department of Land Resource Science, University of Guelph, Guelph, Ontario, Canada N1G 2W1. Position subject to final budgetary approval.

LANGUAGES, LITERATURES AND LINGUISTICS

MEMORIAL UNIVERSITY OF NEW-FOUNDLAND. French Department. Undergraduate teaching position. To teach French as a second language at the first- and second-year university level with emphasis on oral and written communication. The College offers a full range of courses at the first- and second-year levels. Salary and rank dependent upon qualifications and experience. Curriculum vitae and names of three referees to: Dr. F. J. Hodgett, Vice-Principal, Memorial University of Newfoundland, Sir Wilfred Grenfell College, University Drive, Corner Brook, Newfoundland, A2H 6P9. Effective date of appointment: September 1980. Closing date for receipt of applications: When position filled.

UNIVERSITY OF LETHBRIDGE. Department of English. 1. "One position at the Assistant Professor level subject to the availability of funding." 2. A Ph.D. degree with specialization in Canadian Literature. Preference will be given to candidates with some teaching experience and scholarly publications. 3. To teach undergraduate courses in Canadian Literature Introduction to Literature, and other English courses appropriate to the individual's experience. 4. Salary Schedule (1978-79) Assistant Professor: \$20,468 - \$28,616. 5. Applications, including a curriculum vitae, transcripts and three letters of reference, should be sent to: Dr. B. F. Tyson, Acting Chairman, Department of English, University of Lethbridge, 4401 University Drive, Lethbridge, Alberta T1K

3M4. 6. Tenure track position. Probationary appointment for one year beginning 1 July, 1980. 7. Closing date: 28 February, 1980.

UNIVERSITY OF TORONTO. Department of Spanish and Portuguese. 1. Title of position: Senior Tutor in Portuguese, for a three year contract, possibly renewable to a total of five years. 2. Qualifications required: M. A. or its equivalent. Native or near-native fluency essential. Continental Portuguese preferred. 3. Nature of duties: Undergraduate teaching of language courses and related duties. 4. Salary: Competitive. 5. Enquiries should be sent to: Professor K. L. Levy, Department of Spanish and Portuguese, University of Toronto, Ontario M5S 1A1. 6. Effective date of appointment: July 1, 1980. 7. Closing date for applications: March 1, 1980.

UNIVERSITY OF TORONTO. Department of Spanish and Portuguese. 1. Title of position: Assistant Professor of Spanish, for tenure stream position (subject to budgetary approval). 2. Qualifications required: Ph.D. or its equivalent, with a thesis in peninsular literature (Golden Age or later) or stylistics. Publications essential. Native or near-native fluency preferred. 3. Nature of duties: Undergraduate and graduate teaching and research in peninsular literature as well as stylistics and syntax. 4. Salary: Competitive. 5. Enquiries should be sent to: Professor K. L. Levy, Department of Spanish and Portuguese, University of Toronto, Toronto, Ontario M5S 1A1. 6. Effective date of appointment: July 1, 1980. 7. Closing date for applications: March 1, 1980.

UNIVERSITY OF VICTORIA. Department of Hispanic & Italian Studies. Applications are invited for an Assistant Professor of Spanish to assume duties July 1, 1980. Ph.D. or equivalent will be required. (Applications submitted on the basis of forthcoming or expected doctoral degrees will not be entertained). Duties: Teaching of language and literature at all levels of the undergraduate programs. Participation in research expected. Salary: The current floor for Assistant Professors is \$19,350. Applications (including curriculum vitae and names of three referees) should be sent, before March 14, 1980, to Dr. Pablo Cabanas, Chairman of the Department of Hispanic and Italian Studies, University of Victoria, Victoria, B.C. V8W 2Y2.

BRANDON UNIVERSITY. Department of Classical and Modern Languages. Applications are invited for a nine-month replacement appointment in French at the Lecturer level. Assistant Professor level. Qualifications: Ph.D. preferred, teaching experience. Duties: To teach three undergraduate French courses: first-year language, second-year language, and 17th/18th-century literature or French-Canadian literature. Current annual salary: Lecturer \$14,550; Assistant Professor \$18,300. Send curriculum vitae with names of three referees to: Dr. M. Blamar, Dean, Faculty of Arts, Brandon University, Brandon, Manitoba R7A 6A9. Effective date of appointment: September 1980.

UNIVERSITY OF GUELPH. Department of Languages and Literatures. Nine month contractually limited appointment. Lecturer. Ph.D. desirable. To teach French Language and Civilization (France and/or Quebec) at the Undergraduate level. Salary dependent upon qualifications and experience. Apply to Dr. Margaret Andersen, Chairman, Department of Languages and Literatures, University of Guelph, Guelph, Ontario N1G 2W1. Appointment effective September 1, 1980 or possibly May 1, 1980. Applications accepted until position filled. Appointment subject to budgetary approval. First consideration will be given to those applicants who at the time of application are legally eligible to work in Canada for the period covered by this position.

LAURENTIAN UNIVERSITY. Department of Modern Languages. 1. Ten month non-renewable appointment for sabbatical replacement. 2. Teaching experience; equivalent to native fluency in German required. 3. Teach courses in German language and literature at the undergraduate level. 4. Salary depends upon qualifications and experience. 5. Send full curriculum vitae and names and addresses of three referees to Professor E. Gorky, Chairperson of the Department of Modern Languages, Laurentian University, Sudbury, Ontario P3E 2C6. 6. September 1, 1980 to June 30, 1981. 7. When position filled.

YORK UNIVERSITY. Department of Languages, Literatures and Linguistics. Applications are invited for a contractually limited appointment at the rank of Assistant Professor for one or two years with the

possibility of renewal. Ph.D. and teaching experience required. Experience in educational linguistics and publications is desirable. Duties: teaching undergraduate courses in socio- and English linguistics. Salary commensurate with experience. Starting date: July 1, 1980. Closing date for applications: March 21, 1980. Send curriculum vitae and names and addresses of three referees to: Professor R. Fink, Department of Languages, Literatures and Linguistics, York University, 4700 Keele Street, Downsview, Ontario M3J 1P3.

TRENT UNIVERSITY. Department of Modern Languages and Literatures. French Section. Applications are invited for a probationary appointment at the level of lecturer or assistant professor beginning July 1, 1980. Candidates should have a doctorate or be near completion. Principal duties will include undergraduate teaching and personal research in the French classical theatre, but it is expected that the successful candidate will have an interest in other areas of literature and will be capable of teaching senior language courses including philology, stylistics and linguistics. The salary will be commensurate with qualifications and experience. All applications, with curriculum vitae and names of references, should be sent to Professor F. K. Harper, Chairman, French Section, Department of Modern Languages and Literatures, Trent University, Peterborough, Ontario K9J 7B8. The deadline will be March 15, 1980.

THE UNIVERSITY OF ALBERTA. Ukrainian Studies: Managing editor. Competency in an East Slavic language, preferably Ukrainian. Course work in East European and/or Slavic studies, preferably at graduate level. Previous editorial experience and publication experience valuable. Salary range \$15,412 - 18,268. Until filled. The University of Alberta is an equal opportunity employer. Please submit application and resume to Dr. M. R. Lupul, Director, Canadian Institute of Ukrainian Studies, 352 Athabasca Hall, University of Alberta, Edmonton, Alberta T6G 2E8.

UNIVERSITY OF LETHBRIDGE. Department of Modern Languages. 1. One position at the Assistant Professor level in German. 2. Ph.D. at or near completion, with specialization in German language and literature. Teaching experience is a must. 3. To teach five semester-courses in German at the elementary and intermediate levels, as well as the prescribed language laboratory periods. This appointment carries a probationary expectation. Salary Schedule (1978-79): Assistant Professor \$20,446 - \$28,616. 5. Applications, including a curriculum vitae, transcripts and three letters of reference, should be sent to: The Chairman, Department of Modern Languages, University of Lethbridge, 4401 University Drive, Lethbridge, Alberta T1K 3M4. 6. Term appointment for one year beginning 1 July 1980. 7. Closing date: 31 March 1980.

STANFORD UNIVERSITY. Department of French and Italian. Andrew B. Hammond Endowed Chair in French Languages, Literature, and Civilization. Leading scholar of established reputation. Beginning Fall 1980. Address applications, including dossiers, to: Marc Bertrand, Chair, Search Committee, Dept. of French and Italian, Stanford University, Stanford, CA 94305. Equal Opportunity/AEE.

UNIVERSITY OF TORONTO. Department of Spanish and Portuguese. Title of position: Assistant Professor of Spanish for a one-year contract (subject to budgetary approval). Qualifications required: Ph.D. or equivalent, with a thesis in modern Hispanic literature. Experience in language teaching and a strong commitment to research essential. Native or near-native fluency preferred. Nature of duties: Undergraduate teaching of language and literature courses. Salary: Commensurate with qualifications and experience. Applications should be sent to: Professor K. L. Levy, Department of Spanish and Portuguese, University of Toronto, Toronto, Ontario M5S 1A1. Effective date of appointment: July 1, 1980. Closing date for applications: March 15, 1980.

TRENT UNIVERSITY. Department of Modern Languages and Literatures. 1. One position at the Assistant Professor level in German. 2. Ph.D. at or near completion, with specialization in German language and literature. Teaching experience is a must. 3. To teach five semester-courses in German at the elementary and intermediate levels, as well as the prescribed language laboratory periods. This appointment carries a probationary expectation. Salary Schedule (1978-79): Assistant Professor \$20,446 - \$28,616. 5. Applications, including a curriculum vitae, transcripts and three letters of reference, should be sent to: The Chairman, Department of Modern Languages, University of Lethbridge, 4401 University Drive, Lethbridge, Alberta T1K 3M4. 6. Term appointment for one year beginning 1 July 1980. 7. Closing date: 31 March 1980.

Spanish Section. Applications are invited for a probationary appointment at the level of lecturer or assistant professor beginning 1 July, 1980. Candidates should have a doctorate or its equivalent, and specialization in Spanish-American literature. Native or near-native fluency is essential. Principal duties will include undergraduate teaching and research in Spanish-American literature, as well as the teaching of language courses. The salary will be commensurate with qualifications and experience. All applications, with curriculum vitae and names of referees, should be sent to Professor R. M. Garrido, Chairman, Spanish Section, Department of Modern Languages and Literatures, Trent University, Peterborough, Ontario K9J 7B8. The deadline will be 15 March, 1980.

TRENT UNIVERSITY. Department of Modern Languages and Literatures. German Section. Applications are invited for a seasonal part-time appointment at the level of lecturer beginning 1 July, 1980. The successful candidate will have demonstrated ability in teaching German language at secondary or university level. Principal duties will include responsibility for two sections of introductory German. The honorarium will be \$7,000. All applications, with curriculum vitae and names of three referees, should be sent to Professor D. Gallop, Dean of Arts and Sciences, Trent University, Peterborough, Ontario K9J 7B8. The deadline will be 1 March, 1980.

LAW

UNIVERSITY OF SASKATCHEWAN. College of Law. The College of Law, University of Saskatchewan invites applications for one-year term appointments and any renewable positions that may become vacant with effect from July 1, 1980. Assistant professor will be the likely level of appointment. A graduate degree in law, significant experience in practice or equivalent is required. Salary will be commensurate with qualifications and experience. Applications, accompanied by a detailed curriculum vitae and the names of three referees, should be addressed to Dean Donald H. Clark, College of Law, University of Saskatchewan, Saskatoon, Saskatchewan, S7N 0W0.

THE UNIVERSITY OF ALBERTA. Department of Industrial and Legal Relations. Department of Industrial and Legal Relations in the Faculty of Business Administration and Commerce, invites applications for a full-time, tenure-track position in Legal Relations. Applicants must hold the LL.B. or J.D. degree; further training in law or in a related discipline is highly desirable. The Department offers programs of study in both industrial relations and development fields, the latter being a new and developing field in Canada which provides a broadly-based interdisciplinary approach to legal studies in business and society. The successful applicant will participate in course and program development. The position available immediately. Applications should include a curriculum vitae and the names of at least three referees, and should be sent to Professor Michael Park, Department of Industrial and Legal Relations, 320 Athabasca Hall, The University of Alberta, Edmonton, Alberta, Canada T6G 2G1; telephone, (403) 432-5367.

MATHEMATICS/STATISTICS

MCMASTER UNIVERSITY. Mathematical Sciences/Computer Science/Statistics. Applications are invited for two positions as Assistant Professor (subject to final budgetary approval), one of which may be a tenure-track appointment and the other contractually limited for two years. Ph.D. and demonstrated research competence in one of the areas of Analysis, Computer Science, Statistics or some other branch of Mathematics. Preference will be given to applicants who are eligible for employment in Canada at the time of application. Teaching especially at undergraduate level, and research. Salary dependent upon qualifications and experience. Minimum in 1979/80 for Assistant Professor is \$17,850, for Associate \$23,050. Curriculum vitae and names of three referees should be sent to Dr. T. Husain, Chairman, Department of Mathematical Sciences, McMaster University, 1280 Main Street West, Hamilton, Ontario, L8S 4K1. The appointment will be ef-

fective July 1, 1980 or September 1, 1980. Closing date February 28, 1980.

SIMON FRASER UNIVERSITY. Department of Mathematics. The Department of Mathematics invites applications for the positions of (i) tenure track position of assistant professorship in statistics and (ii) a visiting assistant professorship in statistics, both positions commencing September 1, 1980. Applicants must have a Ph.D. or equivalent research experience in statistics. Duties will include teaching and research. The salary will be commensurate with experience. Appointment is dependent upon final budget approval. Applications should be received by March 1, 1980. Applicants should arrange for three letters of reference to be sent directly to: Dr. M. Singh, Chairman, Department of Mathematics, Simon Fraser University, Burnaby, B.C. V5A 1S6.

SAINT MARY'S UNIVERSITY. Department of Mathematics. Applications are invited for full-time positions in the Department of Mathematics. The appointments are tenure-track and should be made in the initial contractual period of three years. Rank and salary will be based on qualifications. Applicants must possess a doctorate, or have equivalent research experience, be active in research, and be enthusiastic for undergraduate teaching. All mathematical specialties will be considered, but our special needs are: Development of mathematical aspects of Computer Science, and (2) liaison with high schools and development of remedial courses. Applications and letters of reference should be addressed to: Dr. Y.P. Singh, Acting Chairman, Department of Mathematics, Saint Mary's University, Halifax, Nova Scotia B3N 3C3. Applications will be accepted until the positions are filled.

UNIVERSITY OF TORONTO. Department of Statistics. (Actuarial Science) Subject to budget contingencies — tenure-stream position in Actuarial Science on the St. George Campus. Appointment to commence July 1, 1980. Evidence of excellence in teaching and research required. Candidates who are Associates of a professional actuarial association will be preferred. Applications as soon as possible to: The Chairman, Department of Statistics, University of Toronto, Toronto, Ontario, Canada M5S 1A1.

THE UNIVERSITY OF CALGARY. Department of Mathematics and Statistics. Division of Pure Mathematics. Applications are invited for a faculty position at the Assistant Professor level in Pure Mathematics, to commence in the 1980/81 academic year. The appointee will be expected to undertake both teaching and research and should hold or have completed all requirements for a doctoral degree. While candidates in all areas will be considered, applications from specialists in modern analysis and/or complex variable theory will be most welcome. The appointment is subject to the availability of funds. Applicants should address their applications, with curriculum vitae, list of publications and names of three referees to: Dr. P.J. Browne, Chairman, Division of Pure Mathematics, Department of Mathematics and Statistics, The University of Calgary, Calgary, Alberta, T2N 1N4, to be received in Calgary by April 1, 1980.

THE UNIVERSITY OF CALGARY. Department of Mathematics and Statistics. 1. There is a possibility of one or two appointments at the Assistant or Associate Professor level. A Ph.D. in Probability or Statistics is required. The duties include research and teaching at the undergraduate and graduate levels. Current Salary Range: (under revision) Assistant Professor \$20,094 to \$26,282; Associate Professor \$24,732 to \$34,047. 2. An Instructor in the Statistics Division is required to a) teach part-time b) assist in Statistics laboratories full-time. The minimum requirement is an M.Sc. in Statistics. Current Salary Range: Instructor 1 \$15,255 to \$20,477; Instructor II \$20,094 to \$26,282; Senior Instructor \$24,732 to \$34,047. Applicants should address their applications, with curriculum vitae, list of publications, and names of three referees to: The Head, Department of Mathematics and Statistics, The University of Calgary, 2920-24th Avenue, N.W., Calgary, Canada T2N 1N4, to be received in Calgary by 1st April, 1980.

MEDICINE

UNIVERSITY OF TORONTO. Department of Paediatrics. Hospital Department: Division

of Cardiology. University Title: Assistant Professor/Associate Professor. Hospital Title: Staff Physician. Qualifications required: M.D. Cardiologist with a minimum of two years basic research training in Cardiac Electrophysiology. Nature of Duties: To develop the service, research and training programme in cardiac electrophysiology in the Division of Cardiology of the Department of Paediatrics, Faculty of Medicine, the University of Toronto, at the Hospital for Sick Children. Salary is to commensurate with experience. Person to whom enquiries should be sent: Dr. David H. Caver, Physician-in-Chief, The Hospital for Sick Children, 555 University Avenue, Toronto, Ontario M5G 1X8. Effective date of appointment: July 1, 1980. Closing date for receipt of applications: March 1, 1980.

UNIVERSITY OF TORONTO. Department of Medical Microbiology. University Department: Medicine and cross-appoint with Medical Microbiology. Hospital Department: Division of Medicine (Infectious Disease) University Title: Lecturer or Assistant Professor. Hospital Title: Staff Physician (Toronto General Hospital and Mount Sinai Hospital). Qualifications required: F.R.C.P. (C) in Internal Medicine. Research training in Infectious Diseases. Nature of Duties: Research in Infectious Diseases (more than 50%). Clinical Consultant in Infectious Diseases; Teaching (Undergraduate and Post-Graduate). Salary: \$35,000. Plus (depending on experience). Person to whom enquiries should be sent: H. Vellend, M.D., Head, Division of Infectious Diseases, U1W-1102, Toronto General Hospital, Toronto, Ontario M5G 1L7. Effective Date of Appointment: July 1, 1980. Closing Date for receipt of Applications: March 1st, 1980.

UNIVERSITY OF TORONTO. Department of Medical Microbiology. Hospital Department: General Division of Neurology. University Title: Assistant/Associate or Full Professor. Hospital Title: Clinician-Scientist. Qualifications required: M.D.—F.R.C.P.(C) Experience in Research. Nature of Duties: The Neurology Department of the University of Toronto seeks a full-time 'Clinician-Scientist' to join the Division of Neurology at the Toronto General Hospital. The appointee will have major responsibility for direction of the Electroencephalography Laboratory and for development of a research programme. Salary: Commensurate with experience. Person to whom enquiries should be sent: Dr. J.R. Wherrett, NUW-1102, Toronto General Hospital, Toronto, Ontario, Canada M5G 1L7. Effective Date of Appointment: July 1, 1980. Closing date for receipt of Applications: March 31, 1980.

UNIVERSITY OF TORONTO. Department of Ophthalmology. University Title: Assistant Professor to full professor. Qualifications required: M.D. experience in the field of Retinitis Pigmentosa. Nature of Duties: To act as a research scientist to direct a program on Retinitis Pigmentosa. Must have experience in the field, with evidence of creative work. Also must have a personality capable of developing the work of a group. Salary: Commensurate with experience. Person to whom enquiries should be sent: Dr. J.C. McCulloch, Chairman, Department of Ophthalmology, 1 Spadina Crescent, University of Toronto, Toronto, Ontario, Canada M5S 2J5. Effective Date of Appointment: July 1 or September 1, 1980. Closing Date for receipt of Applications: February 29, 1980.

UNIVERSITY OF SASKATCHEWAN. Department of Physiology. Applications are invited for an appointment as Assistant Professor in the Department of Physiology. Applicants must have an M.D., D.V.M. or Ph.D. degree with at least two years of postdoctoral experience. Experience in respiratory physiology is desirable. Responsibilities include: teaching of undergraduate and graduate students and the establishment of an independent research program. The appointment will be tenurable. Salary will be dependent on qualifications and experience. The present salary range starts at \$18,400 (1979-79). Send applications (including complete curriculum vitae and the names of three references) to: Dr. J.W. Phillips, Head, Department of Physiology, College of Medicine, University of Saskatchewan, Saskatoon, Saskatchewan, Canada S7N 0W0.

UNIVERSITY OF TORONTO. Department of Ophthalmology. University title: Lecturer. Hospital department: Mount Sinai Neuro-ophthalmology. Hospital title: Mount Sinai Neuro-ophthalmologist. Qualifications required: Must be certified in Ophthalmology by the Royal College. Must have specialized training in Neuro-ophthalmology. Candidate

must have qualifications suitable for directing a subdepartment of neuro-ophthalmology in a teaching hospital. Nature of duties: Supervision of liaison between department of Neurology and Ophthalmology. Teaching of medical students and interns and conducting regularly scheduled clinics. Salary: Commensurate with experience. Person to whom enquiries should be sent: Dr. J.C. McCulloch, Chairman, Department of Ophthalmology, 1 Spadina Crescent, University of Toronto, Ontario. Effective date of Appointment: July 1, 1980. Closing date for receipt of Applications: March 1, 1980.

UNIVERSITY OF TORONTO. Department of Medical Microbiology. University title: Lecturer or Assistant Professor. (If no post-doctoral experience — with view to promotion to Assistant Professor) Qualifications required: Ph.D. in microbiology. Nature of Duties: Research work in clinical microbiology and teaching in Sunnybrook Hospital, Central Division of Medical Microbiology. Department: University of Toronto. Salary: commensurate with experience. Person to whom enquiries should be sent: Dr. I.B.R. Duncan, Sunnybrook Medical Centre, Toronto, Ontario M4N 3M5. Effective date of appointment: April 1, 1980. Closing date for receipt of applications: March 1, 1980.

UNIVERSITY OF TORONTO. Department of Pediatrics. Hospital department: Pediatrics. University title: Assistant Professor. Hospital title: Staff Physician. Qualifications required: Specialist qualification in Pediatrics, training in Gastroenterology. Nature of duties: Undergraduate, postgraduate education, patient care, and research. Salary: \$35,000. Person to whom enquiries should be sent: Dr. J.R. Hamilton, The Hospital for Sick Children, 555 University Avenue, Toronto, Ontario M5G 1X8. Effective date of appointment: September 1, 1980. Closing date for receipt of applications: March 1, 1980.

MEMORIAL UNIVERSITY OF NEWFOUNDLAND. Faculty of Medicine. Endocrinologist. Applications are invited for a full-time position in the Discipline of Medicine, Memorial University of Newfoundland. This is a joint appointment with The General Hospital which is situated with the Medical School within the Health Sciences Centre. A Clinical Investigation Unit as well as clinical and research laboratories are housed within this facility. The activities of the successful applicant will include undergraduate and postgraduate teaching, research, and patient care. Inquiries should be directed to: Dr. G.B. Adams, Acting Chairman, Discipline of Medicine, Memorial University of Newfoundland, St. John's Newfoundland, A1B 3V6.

THE UNIVERSITY OF ALBERTA. Department of Orthopaedic Surgery. Applications are invited for a Geographic Full-time position in the Division of Orthopaedic Surgery. Applicants should be orthopaedic surgeons with considerable clinical experience and special interests in basic and applied research. Salary commensurate with experience and standing. Date negotiable. Closing date for applications February 29, 1980. Send curriculum vitae, list of publications and names and addresses of three referees to: Dr. H.T.G. Williams, Professor and Chairman, Department of Surgery, 11-105 Clinical Sciences Building, University of Alberta, Edmonton, Alberta T6G 2G3.

UNIVERSITY OF ALBERTA. Department of Paediatrics. 1) Clinical Geneticist with experience in genetic evaluation and counselling, and an interest in undergraduate teaching and research. 2) Biomedical Geneticist to direct a Provincial metabolic screening laboratory and coordinate followup and management of cases. Strong research orientation preferred. 3) Nurse Coordinator. Duties include data collection and pedigree drawing, following questionnaires, visits, interview and undergraduate teaching, public education, and bibliographic searches. Suitable candidate with Master's degree will also be appointed to Faculty of Nursing at the level of instructor or assistant professor. 4) Cytogenetics Technician. BSc with experience in chromosome banding and/or amniotic fluid cell culture techniques. Send curriculum vitae and 3 references to: Director, Northern Alberta Programme for the Hereditary and Familial Diseases, 4th Floor Clinical Sciences Bldg., Edmonton, Alberta, T6G 2G3.

MEMORIAL UNIVERSITY OF NEWFOUNDLAND. The Faculty of Medicine. Applications are invited for a full-time University post in Psychiatry, a joint appointment

between The Faculty of Medicine and The Waterford Hospital. The post is a geographic full time position at the Waterford Hospital, a 400 bed psychiatric hospital with outpatient, day care and boarding care programs. The hospital is affiliated with the University. The teaching responsibilities include the coordination of postgraduate teaching at The Waterford Hospital, as well as participation in the teaching program of the Faculty of Medicine. Undergraduate students in medicine and other disciplines. Involvement in research is also expected. Seniority and salary will depend on qualifications and experience. Housing at reasonable rates and in attractive surroundings is available. Applicants should send a full curriculum vitae and the names of two or three referees to: The Chairman in Psychiatry, Faculty of Medicine, HSC 1170, Memorial University of Newfoundland, St. John's, Newfoundland, A1B 3V8 Canada.

MEMORIAL UNIVERSITY OF NEWFOUNDLAND. Faculty of Medicine. The Faculty of Medicine at Memorial University of Newfoundland invites applications for a position as Research Fellow within the Discipline of Medicine. The successful candidate will commence activities on July 1, 1980, under the supervision of Faculty members of the Discipline. Prerequisite will ordinarily include graduation from Medical School plus at least three years of postgraduate training, or alternatively, completion of a Ph.D. program with research interests in an area of medical medicine. Remuneration will ordinarily be at the salary rate offered by the Medical Research Council of Canada. Inquiries, accompanied by a curriculum vitae and a statement of research activities, should be forwarded to: Dr. G.B. Adams, Acting Chairman, Discipline of Medicine, Memorial University of Newfoundland, Health Sciences Centre, St. John's, Newfoundland, A1B 3V6.

MUSIC

BRDCK UNIVERSITY. Department of Music Applications are invited for a faculty position at the rank of assistant or associate professor in Piano Performance, with a strong second area in Music Theory or Music History. M. Mus. plus work toward Doctorate. Experienced teacher and recitalist. Date of appointment—July 1, 1980. Letter of application, references, tapes and dossier of academic background and experience should be sent to: Dr. Thomas J. McGary, Chairman, Department of Music, Brock University, St. Catharines, Ontario, L2S 3A1.

BROCK UNIVERSITY. Department of Music. Applications are invited for a faculty position at the rank of assistant or associate professor in Piano Performance with a strong second area in Music Theory or Music History. M. Mus. plus work toward Doctorate. Experienced teacher and recitalist. Date of appointment—July 1, 1980. Letter of application, references, tapes and dossier of academic background and experience should be sent to: Dr. Thomas J. McGary, Chairman, Department of Music, Brock University, St. Catharines, Ontario L2S 3A1.

UNIVERSITY OF GUELPH. Department of Music. Assistant Professor of Music for teaching composition — including electronic music—and traditional and contemporary theoretical studies. A doctorate, a record of publications, and experience in teaching are required. Instrumental and/or choral performance experience an asset. Position subject to final budgetary approval. Send applications to: Dr. Stanley Saunders, Director of Music, Room 215, College of Arts, University of Guelph, Guelph, Ontario N1G 2W1.

UNIVERSITÉ D'OTTAWA. Département de Musique. 1. Titres requis: Doctorat en musique. 2. Titres requis: Doctorat en musique. 3. Titres requis: Doctorat en musique. 4. Titres requis: Doctorat en musique. 5. Titres requis: Doctorat en musique. 6. Titres requis: Doctorat en musique. 7. Titres requis: Doctorat en musique. 8. Titres requis: Doctorat en musique. 9. Titres requis: Doctorat en musique. 10. Titres requis: Doctorat en musique. 11. Titres requis: Doctorat en musique. 12. Titres requis: Doctorat en musique. 13. Titres requis: Doctorat en musique. 14. Titres requis: Doctorat en musique. 15. Titres requis: Doctorat en musique. 16. Titres requis: Doctorat en musique. 17. Titres requis: Doctorat en musique. 18. Titres requis: Doctorat en musique. 19. Titres requis: Doctorat en musique. 20. Titres requis: Doctorat en musique. 21. Titres requis: Doctorat en musique. 22. Titres requis: Doctorat en musique. 23. Titres requis: Doctorat en musique. 24. Titres requis: Doctorat en musique. 25. 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marginaux. 5. Les candidatures devront comprendre un curriculum vitae détaillé ainsi que les noms et adresses d'au moins trois répondants. Keith C. MacMillan, directeur, Département de Musique, Université d'Ottawa, Ottawa, K1N 6N5. 6. Entrée en fonction: 1er juillet 1980. 7. Date limite: le 20 février 1980.

UNIVERSITY OF OTTAWA. Department of Music. 1. A position available in Music Theory. 2. Qualifications: M.A. or equivalent. Must have working knowledge of French and English. Principally teaching theory, Harmony and Counterpoint to undergraduate students in French and English, the general orientation being toward the French traditions, especially in Solfège. About one third of the total teaching time could be in another musical discipline, whether as performer, in History, etc. 4. Rank and salary: commensurate with qualifications and experience. 1979-80 minimum salaries are: Lecturer, \$14,353; Assistant Professor, \$18,509; Associate Professor, \$23,807; Full Professor, \$30,692, with extensive fringe benefits. 5. Applications should include up-to-date curriculum vitae and names and addresses of at least three referees. Address to Keith C. MacMillan, Chairman, Department of Music, University of Ottawa, Ottawa, Ontario, K1N 6N5. 6. Date of appointment: July 1, 1980. 7. Deadline for applications: February 29, 1980, or when position filled.

THE UNIVERSITY OF WESTERN ONTARIO. Faculty of Music. The Education Department requires a String Instructor. Rank: Open. Eight-month sabbatical replacement. Qualifications: Advanced degree; string principal with teaching experience. Duties: To teach undergraduate music in lower classes (minor instrument classes in music education) and applied music (private tuition). Salary is negotiable, commensurate with experience and qualifications. Date of appointment is September 1, 1980, subject to availability of funds. Closing date for applications: when filled. Address all applications to: Professor K. L. Gray, Acting Chairman, Music Education Department, University of Western Ontario, London, Ontario N6A 3K7.

THE UNIVERSITY OF WESTERN ONTARIO. Music Education Department. The Faculty of Music invites applications for a position in the Music Education Department to assist in an expanding research program. Rank—open. Qualifications required are Ph.D., expertise in the psychology of music, research experience and competence in research design and statistics. Duties include thesis advising at Masters and Doctoral levels, teaching graduate research and psychology of music courses and undergraduate teaching in a related area. Salary is negotiable, commensurate with expertise and qualifications. The date of appointment is July 1, 1980, subject to availability of funds. The closing date for applications, when filled. Address all inquiries to: Professor K. L. Gray, Acting Chairman, Music Education Department, Faculty of Music, University of Western Ontario N6A 3K7.

YORK UNIVERSITY. Department of Music. The York University Department of Music has a vacancy for Visiting Lecturer or Visiting Assistant Professor, appointment date September 1, 1980. Ph.D. completed or near completion. Field work experience; evidence of ability to develop materials from Can. folk music for history & musicianship courses. Supervision of graduate student research in Can. ethno-musicology, urban & rural; teaching undergraduate courses in musicianship & in history of New World music. Applications should be sent to: Professor David Lidov, Acting Chairman, Department of Music, York University, 4700 Keele St. Downsview, Ontario M3J 1P3. Closing date is February 1, 1980 or until position is filled. This position is subject to external funding.

NURSING

UNIVERSITY OF SASKATCHEWAN. College of Nursing. Faculty positions will be available in the College of Nursing July 1, 1980. Applicants with doctoral or master's degree will be considered for tenureable appointment. Limited-term appointments will also be available to replace faculty on leave of absence. The undergraduate baccalaureate program is integrative and conceptually based. Team teaching is the mode used in most classes and all faculty are expected to have specialization in a clinical area and to participate in clinical supervi-

sion of students. Level of appointment and salary will be commensurate with previous experience in teaching, research, and clinical nursing. Further information may be received from: Hester J. Kernen, Professor and Dean, College of Nursing, University of Saskatchewan, Saskatoon, Sask. S7N 0W0. **UNIVERSITY OF CALGARY.** Faculty of Nursing. Applications are invited from nurses with doctoral or master's degrees for the following appointments: 1) Chairman of the Baccalaureate Degree Programme with experience in programme planning, curriculum development and team leadership. 2) Faculty positions for nurses with advanced clinical preparation in: medical-surgical nursing, mental health/psychiatric nursing, parent-child nursing, and community health nursing. A Master of Nursing Degree programme is at an advanced planning stage. Salary and rank will be commensurate with education and experience. Applications with a curriculum vitae and the names and addresses of three referees should be sent to: Dr. Margaret Scott Wright, Dean, Faculty of Nursing, The University of Calgary, 2920-24th Ave., N.W., Calgary, Alberta, T2N 1N4.

NUTRITION AND CONSUMER STUDIES

ST. FRANCIS XAVIER UNIVERSITY. Department of Nutrition and Consumer Studies. Applications are invited for an appointment in Consumer Studies, effective July 1, 1980. Responsibilities will include giving leadership in expanding the undergraduate program in Consumer Studies, and in teaching courses in that area. Minimum educational requirement M.Sc.; Ph.D. preferred. At least one degree must be in the area of Home Economics. Salary commensurate with qualifications and experience. Applications received until the position is filled. Applicants should send a curriculum vitae, transcripts, and names of three referees to: Dr. Helen Aboud, Chairman, Department of Nutrition and Consumer Studies, St. Francis Xavier University, Antigonish, Nova Scotia B2G 1C0.

PHILOSOPHY

DALHOUSIE UNIVERSITY. Department of Philosophy. Possible Regular Appointment. Begins July 1, 1980. Rank: Assistant (or possibly Associate) Professor. Areas open. Salary depending on qualifications, floors for 1979-80: Assistant \$17,750; Associate \$22,190. Apply Professor Peter K. Schuch, Chairman, Department of Philosophy, Dalhousie University, Halifax, Nova Scotia B3H 3J5. Deadline for Applications: March 1, 1980.

UNIVERSITY OF VICTORIA. Department of Philosophy. Applications are invited for an appointment from 1 September 1980 to 30 April 1981 at the rank of Visiting Lecturer or Visiting Assistant Professor. The Ph.D. degree is a requirement for appointment as Visiting Assistant Professor. Candidates for Visiting Lecturer should be near completion of their doctorate. Areas of specialization: Existentialism, Philosophy of History, 19th Century Philosophy. Letter of application, including curriculum vitae, and three letters of reference should be sent to the Chairman, Professor John M. Michelsen, Philosophy Department, University of Victoria, Victoria, B.C. V8W 2Y2. Closing date: 1 March 1980.

UNIVERSITY OF OTTAWA. Department of Philosophy. Associate or Full Professor. The Department is seeking a candidate with a well established reputation and substantial competence in one or more of the following: British Empiricism, Analytic Philosophy, especially Philosophy of Mind and/or Ethics. Teaching at graduate and undergraduate levels. Salary according to qualifications. All applications must include the following materials: curriculum vitae, three or more confidential letters of reference and recent publications. Inquiries and all application materials should be directed to Professor T.F. Geraers, Chairman, Department of Philosophy, University of Ottawa, 90 Wilbrod, Ottawa, Canada K1N 6N5. Deadline for applications is March 1, 1980.

PHYSICS

UNIVERSITY OF TORONTO. Department of Physics. Assistant Professorship (tenure stream) in Dynamic Meteorology. The new appointee is expected to establish a research program in dynamic meteorology, to teach graduate and undergraduate courses and to supervise graduate students. Available facilities include a computer link to the CRAY 1 at NCAR in Boulder, and the ECLIPSE system of the Meteorology Group. Experience in research in dynamic meteorology and teaching are required. The salary range is \$20,000-\$29,000, depending on experience. Starting date for this regular University position is July 1, 1980. Applications and vitae should be submitted not later than February 28, 1980. Inquiries and vitae should be directed to: Professor R.L. Armstrong, Chairman, Department of Physics, University of Toronto, Toronto, Ontario, M5S 1A7.

POLITICAL SCIENCE

UNIVERSITY OF WESTERN ONTARIO. Department of Political Science. Subject to budgetary considerations, applications are invited for two or more Limited Term Appointments. Preference will be given to candidates capable of teaching in two or more of the following areas: Introductory politics, Canadian politics, public administration, international relations, American government, local government, Quebec politics, political theory. Applicants should have a Ph.D. or be near completion. Salary commensurate with qualifications and experience. Durations of contract subject to negotiation. Deadline for Applications: February 15, 1980. Applications should be addressed to: Dr. M.W. Westmacott, Chairman, Department of Political Science, Social Science Centre, University of Western Ontario, London, Ontario N6A 5C2. **UNIVERSITY OF VICTORIA.** Department of Political Science. 1. Visiting Assistant Professor. July 1, 1980 to June 30, 1982. 2. Ph.D. with a specialization in theory, modern and traditional. Also must be qualified to teach in a substantive or research methods field. 3. Undergraduate and graduate teaching and research. 4. Commensurate with qualifications. Current floor for the rank is \$19,350 per annum. 5. Dr. Mark Sproule-Jones, Chairman, Department of Political Science, University of Victoria, P.O. Box 1780, Victoria, B.C. V8W 2Y2. 6. 1 July, 1980. 7. 1 March, 1980.

UNIVERSITY OF LETHBRIDGE. Department of Political Science. 1. "One position at the Assistant Professor level subject to the availability of funding." 2. Applicants should have a Ph.D. completed or near completion. 3. Duties include undergraduate teaching and research areas of expertise should include Canadian public policy and/or comparative politics (developing areas) with a background in political behaviour. 4. Salary Schedule (1978-79): Assistant Professor \$20,440-\$22,940. 5. Applications, including a curriculum vitae, transcripts, and three letters of references, should be sent to: Chairman of Search Committee, Department of Political Science, University of Lethbridge, 4401 University Drive, Lethbridge, Alberta T1K 3M4. 6. Tenure track position. Probationary appointment for one year beginning 1 July, 1980. 7. Closing date: 28 February, 1980.

ACADIA UNIVERSITY. Department of Political Science. Applications are invited for a 10 month seasonal appointment covering the period August 1, 1980 to May 1, 1981 in the Department of Political Science. The rank and salary are open and will be in accordance with qualifications and experience. The appointment is subject to budgetary approval. Expertise is sought in one or two of the following areas: Government, Political theory, International relations, and Comparative government and area studies. Applications which will continue to be received until the Appointment is filled should be sent to: Or. Gabriel Fischer, Acting Head, Department of Political Science, Acadia University, Wolfville, N.S. B0P 1X0.

UNIVERSITY OF VICTORIA. Political Science Department. 1. Sessional lecturers. The equivalent of 2 1/2 full-time positions will be available. 2. Normally a Ph.D. or be near completion of Ph.D. Qualified to teach courses in one or more of the following fields: International Relations, Public Administration, Urban Politics, Canadian Politics and Public Law. 3. Teach undergraduate courses for faculty members

on leave in 1980/81 from 1 September 1980 to 30 April 1981. 4. Commensurate with qualifications. 5. Curriculum vitae and the names of three referees should be sent to: Dr. Mark Sproule-Jones, Chairman, Department of Political Science, University of Victoria, P.O. Box 1700, Victoria, B.C. V8W 2Y2. 6. September, 1980. 7. 1 April, 1980.

PSYCHIATRY

QUEEN'S UNIVERSITY. Department of Psychiatry. Beechgrove Regional Children's Centre, Kingston, Ontario. A position is available for an academic at the level of Assistant or Associate Professor, depending upon qualifications. A fellowship of the Royal College of Physicians (Canada) specializing in psychiatry is necessary. The position involves participation in the teaching programs of the Department, particularly in the Division of Child Psychiatry. The appointment will also be at the level of Assistant Clinical Director, in charge of Children's Services in the Beechgrove Regional Children's Centre. Training and clinical experience in child psychiatry are necessary, as well as research interest, particularly in the area of child psychotherapy and general behavioural change. Please forward applications together with curriculum vitae and the names of three referees to: Dr. Brian McConville, Professor and chairman, Division of Child Psychiatry, Department of Psychiatry, Queen's University, Kingston, Ontario.

QUEEN'S UNIVERSITY. Department of Psychiatry. Beechgrove Regional Children's Centre, Kingston, Ontario. A position is available for an academic at the level of lecturer/assistant Professor depending on qualifications. Fellowship of the Royal College of Physicians (Canada) specializing in psychiatry is necessary. The position is primarily associated with the teaching programs of the Division of Child Psychiatry, and the clinical appointment is in the children's services of the Beechgrove Regional Children's Centre. Clinical training or experience in child psychiatry is necessary, and a research interest in children, especially in child psychotherapy is desirable. Please forward applications together with curriculum vitae and the names of three referees to: Dr. Brian McConville, Professor and Chairman, Division of Child Psychiatry, Department of Psychiatry, Queen's University, Kingston, Ontario.

PSYCHOLOGY

UNIVERSITY OF MANITOBA. Department of Psychology. Applications are invited for a senior appointment in the area of experimental psychology. While the department wishes to make the appointment at the full professor level, applicants at the associate professor level will also be considered. Preference will be given to those with an established scholarly record in the behaviour modification, abnormal processing, learning, perception, or sensory areas. Salary is negotiable. A cross-appointment in a cognate department is possible. Canadian citizens, landed immigrants, and all others currently entitled to work in Canada are especially encouraged to apply. Interested applicants should send their curriculum vitae to Dr. J.S. McIntyre, Head, Department of Psychology, University of Manitoba, R3T 2N2. The appointment begins July 1, 1980. Applications accepted until position filled.

BISHOP'S UNIVERSITY. Department of Psychology. Applications are invited for a position at the Assistant or Associate Professor level (tenure-stream appointment). Duties will include teaching the equivalent of three full-year undergraduate courses (in English) including Abnormal Psychology and Personality, a doctorate in psychology is required and some teaching experience is desirable. Some knowledge of French would be an additional asset. The 1978-79 salary floors of the University were as follows: Lecturer \$16,640, Assistant Professor \$20,800, Associate Professor \$27,040. Current salaries are under negotiation. The position is tenable on July 1, 1980. Applicants should send curriculum vitae, the names of three referees, statement of research interests and, if possible, copies of recent publications to: Dr. K. Kuiper, Dean of Faculty, Bishop's University, Lennoxville, Quebec, J1M 1Z7.

CONCORDIA UNIVERSITY. Psychology Department. The Psychology Department anticipates one or more openings at the

level of Assistant or Associate Professor in the following areas: a) Clinical Psychology. Background in development of graduate clinical training. Candidate should be capable of making significant contribution to the clinical activities of the Department's Applied Psychology Centre. Candidates who also have an active ongoing research program capable of making a contribution to graduate training would be regarded as making significant contributions. Responsibilities: graduate clinical supervision, undergraduate and graduate teaching, research supervision. b) The Department also anticipates one position for which the area of specialty is open. Candidates should have a strong ongoing research program. Responsibilities include graduate and undergraduate teaching, and research supervision. c) The Department also anticipates several leave replacement positions for 1980-81: area of specialty is open. Candidates should forward curriculum vitae, three letters of reference and publication reprints to: Dr. Norman Segalowitz, Chairman, Psychology Department, Concordia University, Arts and Science Faculty, 1455 de Maisonneuve West, Montreal, Quebec, H3G 1M8, Canada.

UNIVERSITY OF LETHBRIDGE. Department of Psychology. 1. Clinical/Community Psychologist at the Assistant Professor level (subject to the availability of funding). 2. Training or extension in the area of community agency settings; undergraduate teaching experience; experience in supervision of students in field placements; ability to teach in the area of community psychology. 3. Teaching duties will include Clinical/Community psychology courses such as Applied Clinical Psychology, Strategies of Intervention in Human Services and Program Evaluation in Applied Psychology. It is expected that a field placement component will be included in most of these courses which will require development of community agency field placements as well as coordination and supervision of students working in the community. An active and ongoing research program in Clinical/Community Psychology is expected in relevant areas such as evaluation of community mental health programs, effectiveness of training of mental health professionals, creation and change of community settings or related areas. 4. Salary Schedule: (1978-79): Assistant Professor \$20,448-\$28,616. 5. Applications, including curriculum vitae, transcripts and three letters of reference, should be sent to: Dr. I.Q. Whishaw, Chairman, Department of Psychology, University of Lethbridge, 4401 University Drive, Lethbridge, Alberta, T1K 3M4. 6. Tenure track position. Probationary appointment for one year beginning 1 July, 1980. 7. Closing date: 15 March, 1980.

PUBLIC RELATIONS

MOUNT SAINT VINCENT UNIVERSITY. Public Relations Department. Mount Saint Vincent University is accepting applications for the position of co-ordinator for its degree programme in Public Relations. The successful candidate will be responsible for teaching undergraduate courses in public relations and developing in-service courses. Preference will be given to candidates with a Ph.D. in public relations or allied field or equivalent experience. Rank and salary will be in accordance with qualifications and experience. Send curriculum vitae and the names of three referees to: Dr. Susan Clark, Dean of Human and Professional Development, Mount Saint Vincent University, Halifax, Nova Scotia, B3M 2J6. Appointment will commence July 1, 1980.

RELIGIOUS STUDIES/ THEOLOGIE

THE UNIVERSITY OF ALBERTA. Department of Religious Studies. The University of Alberta, Department of Religious Studies requires a Historian of Religion with particular competence in Islam for a one-year sabbatical replacement. Undergraduate teaching. Ph.D. preferred. Appointment begins September, 1980. Send resume to: Dr. Eric Vaughn, Chairman, Department of Religious Studies, University of Alberta, Edmonton, Alberta, Canada T6G 2E5.

UNIVERSITE SAINT-PAUL. Faculté de théologie. Est à la recherche de deux professeurs de théologie catholique. Ces postes mènent à la permanence le rang sera déterminé selon les qualifications.

Nominations entrent en vigueur le 1er septembre 1980. Traitement selon le rang et les qualifications. Faire parvenir curriculum vitae et lettres de trois référents au Doyen, Faculté de théologie, 223 rue Main, Ottawa, K1S 1C4, avant le 28 février 1980. Poste: Doctorat. Compréhension de l'anglais parlé est essentielle. Seront considérées: capacité d'enseigner en anglais, connaissance d'autres langues, intérêt particulier pour les questions familiales et sociales. Enseignement au 1er, 2e et 3e cycles en théologie morale et pastorale au service de la Faculté de théologie et/ou de l'Institut de pastorale. Deuxième Poste: Doctorat. Compréhension de l'anglais parlé est essentielle. Seront considérées: capacité d'enseigner en anglais, connaissance des langues anciennes et modernes, expérience dans l'enseignement. Enseignement au 1er cycle éventuellement au 2e et 3e cycles dans un domaine de la théologie dogmatique (ex. question de Dieu, christologie, eucharistie, sacrements).

SOCIAL SCIENCES

UNIVERSITY OF TORONTO. Department of Social Sciences. Applications are invited for a one-year position commencing July 1, 1980, to replace a faculty member on sabbatical leave. The appointment will be at the level of lecturer or assistant professor. Applicants should be able to teach undergraduates in introductory human geography and cultural geography. Ability to participate in the teaching of the philosophy of geography or cartography would be an advantage. Preference will be given to applicants with or in the final stages of a Ph.D. degree. Applications and curriculum vitae should be sent by 29 February 1980 to: Dr. M.F. Bunc, Assistant Chairman (Geography), Division of Social Sciences, Scarborough College, University of Toronto, West Hill, Ontario M1G 1A4.

SOCIAL WORK

McMASTER UNIVERSITY. School of Social Work. Applications are invited for a faculty position (rank open) in the School of Social Work commencing July 1, 1980. The School prepares students for the general practice of Social Work through its undergraduate programme and offers an M.A. programme for students wishing to specialize in social welfare policy. The person appointed would be expected to contribute at both the undergraduate and graduate levels, through both teaching and research, to the development of the School's interest in social policy analysis and implementation. A Ph.D. or equivalent required, with a substantial research record in the social sciences or in law. Applications with curriculum vitae and the names of three referees should be sent as soon as possible to Professor Karl Kinanen, Director, School of Social Work, McMaster University, 1280 Main Street West, Hamilton, Ontario L8S 4M2.

SOCIOLOGY/ ANTHROPOLOGY

CONCORDIA UNIVERSITY. Department of Sociology and Anthropology. The Department of Sociology and Anthropology, Concordia University, anticipates one or two leave replacement positions for 1980-81. Favored areas of specialty are Social Psychology, Deviance and Statistics, although other areas will also be considered. Salary for candidates with their Ph.D. degree will be in the range of the floor of Assistant Professor. Candidates should send curriculum vitae, three letters of reference, and publication reprints to: Joseph Smucker, Chairman, Department of Sociology and Anthropology, Concordia University, 1455 de Maisonneuve West, Montreal, Quebec, H3G 1M8.

McMASTER UNIVERSITY. Department of Sociology. Applications are invited for a one-year visiting Associate Professor commencing July-August, 1980 with Ph.D. or equivalent and at least six years of teaching and research experience. Overseas applications and references from established scholars. Specializations open but desirable related to Departmental specializations of Inequality, Organizations or Individual and Society. Salary commensurate with qualifications and experience. Base salary for Associate

expected to be around \$23,000. Replies to Dr. P.E. Sheriff, Department of Sociology, McMaster University, Hamilton, Ontario.

SIMON FRASER UNIVERSITY. Sociology and Anthropology Department. The department invites applications for a Seasonal Instructorship in Sociology for the Fall Semester, 1980. The candidate is expected to teach two courses and should have teaching experience in at least two of the following areas: Sociology of Knowledge; Philosophy of the Social Sciences; Modern Industrial Society; Introduction to Sociological Theory. Remuneration for the semester: \$2,400. Vitae, plus brief course outlines for preferred areas, should be sent to the Chairperson of Appointments Committee, Sociology and Anthropology Department, Simon Fraser University, Burnaby, B.C. V5A 1S6.

BISHOP'S UNIVERSITY. Department of Sociology. Applications are invited for a tenure stream appointment, rank open. Qualifications for the position are a Ph.D. or near with teaching and research experience. Competence in French would be an asset. Duties will include the teaching of Québec and Canadian Society. The 1978-79 salary floors of the University were as follows: Lecturer \$16,640, Assistant Professor \$20,800, Associate Professor \$27,040. New floors are under negotiation. Applications with curriculum vitae and names of three referees should be addressed to: Dr. J. Kuepper, Dean of the Faculty, Bishop's University, Lennoxville, Québec, J1M 1Z7.

BISHOP'S UNIVERSITY. Department of Sociology. Applications are invited for a tenure stream appointment, rank open. Qualifications for the position are a Ph.D. or near with teaching and research experience. Competence in French would be an asset. Duties will include the teaching of Quantitative Analysis. The 1978-79 salary floors of the University were as follows: Lecturer \$16,640, Assistant Professor \$20,800, Associate Professor \$27,040. Applications with curriculum vitae and names of three referees should be addressed to: Dr. C.G. Rose, Chairman, Division of Social Sciences, Bishop's University, Lennoxville, Québec, J1M 1Z7.

UNIVERSITY OF LETHBRIDGE. Department of Sociology. 1. "One position at the Assistant Professor level subject to the availability of funding." 2. Ph.D. with competence in both scholarly activity and undergraduate teaching. 3. All areas considered but preference given to methods, social policy, social welfare, complex organizations, and industrial sociology. 4. Salary Schedule (1978-79): Assistant Professor \$20,448-\$28,616. 5. Applications, including a curriculum vitae, transcripts and three letters of reference should be sent to: Dr. Reginald Bibby, Chairman, Department of Sociology, University of Lethbridge, 4401 University Drive, Lethbridge, Alberta, T1K 3M4. 6. Tenure track position. Probationary appointment for one year beginning 1 July, 1980. 7. Closing date: 28 February, 1980.

McMASTER UNIVERSITY. Sociology Department. Applications are invited for a Lecturer/Assistant Professorship on a contractually limited basis commencing July, 1980. Ph.D. is desirable and necessary for Assistant Professorship status. Specializations open, but will take into account developing departmental needs. Salary commensurate with qualifications and experience. Replies to Chairperson, Sociology Department, McMaster University, Hamilton, Ontario, Canada L8S 4M4.

McMASTER UNIVERSITY. Sociology Department. Applications are invited for a Senior Assistant Professorship commencing July, 1980 with Ph.D. and teaching experience required. Specializations open, but will take into account developing departmental needs. Salary commensurate with qualifications and experience. Replies to Chairperson, Sociology Department, McMaster University, Hamilton, Ontario, Canada L8S 4M4.

QUEEN'S UNIVERSITY. Department of Sociology. The Department of Sociology at Queen's University expects to make a senior visiting appointment during the academic year 1980-81. The appointment will be for one year only, as is most suitable for persons who have continuing appointments at the associate or full professor level, at other universities. All areas of specialization will be considered, but preference may be given to criminology, deviance and the sociology of law. Salary according to qualifications and experience. Applications of both sexes are equally encouraged to apply. Send applications and vitae to Professor Robert M. Pike, Department of Sociology, Queen's University,

Kingston, Ontario, K7L 3N6.

TRENT UNIVERSITY. Department of Sociology. Depending upon the availability of funds, one or more seasonal positions may be open in the Department of Sociology at Trent University for the 1980-81 academic year. Teaching duties will include introductory sociology and methods of sociological research. Send curriculum vitae and a list of references to The Chairman, Department of Sociology, Trent University, Peterborough, Ontario, K9A 8S8.

UNIVERSITY OF TORONTO. SCARBOROUGH COLLEGE. Sociology. Applications are invited for several contractually limited appointments in Sociology, at the rank of Lecturer or Assistant Professor, commencing July 1, 1980. Initial appointment will be for one year, with the possibility of extension for up to four additional years. Applicants must hold a doctoral degree in sociology and must have special competence in one or more of the following fields: statistics and research methods; formal organizations; occupational sociology; industrial sociology; social stratification; sociology of politics; sociology of law; criminology; juvenile delinquency; demography; urban sociology. Please send curriculum vitae and names of three referees as soon as possible to: Dr. John Alan Lee, Sociology, Scarborough College, University of Toronto, West Hill, Ontario, M1C 1A4.

UNIVERSITY OF ALBERTA. Department of Sociology. Applications are invited for a tenure stream position commencing July 1, 1980, subject to final budgetary approval. Requirements: Ph.D. in Sociology. Areas open but specialization in mass communications preferred. Canadian experience desired. Rank is at the assistant professor level. Forward application, including curriculum vitae and names of three referees to: Dr. T.H. White, Chairman, Department of Sociology, The University of Alberta, Edmonton, Alberta, T6G 2H4. The University of Alberta is an equal opportunity employer.

BRANDON UNIVERSITY. The Department of Sociology and Anthropology. The Department of Sociology and Anthropology of Brandon University invites applications for a nine-month appointment (September 1, 1980 to May 31, 1981) at the Lecturer or Beginning Assistant Professor level, to replace a member on sabbatical leave. The successful applicant will teach Introduction to Sociology plus one or both of Criminology and Classical Sociology. Other specializations will be considered. Salary competitive. Send applications, curriculum vitae, and the names of three referees to: Dr. M. Blonar, Dean, Faculty of Arts, Brandon University, Brandon, Manitoba, R7A 6A9.

BRANDON UNIVERSITY. Department of Sociology and Anthropology. The Department of Sociology and Anthropology of Brandon University invites applications for an appointment as sociologist whose area of specialization is the family. The successful applicant: 1) will be interested in developing research in the area of the family; 2) will be interested in teaching Introduction to Sociology; and 3) ideally would also be interested in developing policy-oriented teaching materials relevant to the delivery of family-related services in social agencies (as well as the customary academic course(s) on the family). This appointment, at the Lecturer or Assistant Professor level begins September 1, 1980. Ph.D. or near Ph.D. required. Salary competitive. Send applications, curriculum vitae, and the names of three referees to: Dr. M. Blonar, Dean, Faculty of Arts, Brandon University, Brandon, Manitoba R7A 6A9.

THE UNIVERSITY OF BRITISH COLUMBIA. Department of Anthropology and Sociology. Applications are invited for a number of visiting positions in Anthropology and Sociology for the session 1980-81. Applicants must be able to teach three of the following: Introductory Anthropology, Introductory Sociology, Archaeology (esp. Pacific and Asian), Physical Anthropology, Indians of Canada, North American Indians, Economic and Ecological Anthropology, Religion and Society, Essays in Folklore Societies, Linguistics, Language and Culture, Population Studies, Social Change, Modernization and Theories of Industrial Society, Sociology of Art, Sociological Theory. Applications, with curriculum vitae, covering letter stating interests and names of referees should be sent to: The Acting Head, Department of Anthropology and Sociology, University of British Columbia, 6303 N.W. Marine Drive, University Campus, Vancouver, B.C., Canada V6T 2B2.

UNIVERSITY OF WATERLOO. Department

of Anthropology. Applications are invited for two positions at the assistant professor level (Ph.D. required). 1. Physical anthropologist. Research specialization is open but ability to teach undergraduate courses in both fossil man and primate behaviour is desirable. 2. Anthropological linguist. Teaching introductory and advanced linguistics courses within an anthropology department. Ability to teach ethnography (other than North American Indians or Pacific) or other cultural anthropology is desirable. Both positions are open subject to funding being available. Send applications to: Thomas S. Abler, Chairman, Department of Anthropology, University of Waterloo, Waterloo, Ontario, N2L 3G1.

UNIVERSITY OF LETHBRIDGE. Department of Anthropology. 1. "One position at the Assistant Professor level subject to the availability of funding." 2. Ph.D. 3. To teach at the undergraduate level and ongoing research. Areas of expertise should include: economic anthropology, cultural ecology, anthropology, ethnically Canadian communities, and archaeology at an introductory level. 4. Salary Schedule (1978-79): Assistant Professor \$20,446-\$26,616. 5. Applications, including a curriculum vitae, transcripts and three letters of references, should be sent to: Chairman of the Search Committee, Department of Anthropology, University of Lethbridge, 4401 University Drive, Lethbridge, Alberta, T1K 3M4. 6. Tenure track position. Probationary appointment for one year beginning July 1, 1980. 7. Closing date: 25 February 1980.

SIMON FRASER UNIVERSITY. Sociology and Anthropology Department. The department invites applications from qualified anthropologists for a two semester visiting (replacement) Assistant Professorship from September 1980 to April 1981. The candidate will be expected to teach two courses each semester, one of them at the lower level in Social Organization and one at the upper level in either Cultural Evolution or Kinship. Remuneration commensurate with qualifications. Vitae should be accompanied with brief expected outputs and sent to: Chairperson of Appointments Committee, Sociology and Anthropology Department, Simon Fraser University, Burnaby, B.C. V5A 1S6.

TRENT UNIVERSITY. Department of Anthropology. Applications are invited for a seasonal (one-year) appointment in cultural anthropology at the Assistant Professor level beginning July 1, 1980. Appointee will be teaching in introductory and upper year program in cultural anthropology including political, economic and legal anthropology. Capacity to assist in introductory physical anthropology course would be helpful, though not essential. Applicants should send a curriculum vitae and the names of three referees to: Dr. Richard B. Johnston, Chairman, Department of Anthropology, Trent University, Peterborough, Ontario K9J 7B8.

URBAN STUDIES

BROCK UNIVERSITY. Institute of Urban and Environmental Studies. Applications are invited for a two-year appointment at the Lecturer level beginning July 1, 1980. Duties include teaching undergraduates in both urban and environmental studies and some administrative responsibilities. Qualifications: Ph.D. or ABD in Urban and/or Environmental Studies or equivalent experience. Preference will be given to those with experience in Environmental Studies. Salary dependent upon qualifications and experience. Forward C.V. with letter of application and names of three references to: Dr. William A. Matheson, Acting Director, Institute of Urban and Environmental Studies, Brock University, St. Catharines, Ontario L2S 3A1.

VISUAL ARTS

UNIVERSITY OF VICTORIA. Department of Visual Arts. Position: Lecturer or Assistant Professor. Qualifications: M.F.A. degree or professional equivalent. Duties: To teach introductory and advanced photographic theory; the ability to teach in other studio areas is desirable. Salary: According to qualifications. 1979-80 floor \$15,385 (Lecturer), \$19,350 (Assistant Professor). Appointment Date: 1 July 1980. Closing date: 15 March 1980. Apply to: Send curriculum vitae and three references to: Professor George Treisman, Department of Visual Arts, University of Victoria, P.O. Box 1700, Victoria, B.C. Telephone: (604) 477-6911, local 4700. Appointment is subject to approved funding.

VOCATIONAL EDUCATION

UNIVERSITY OF NEW BRUNSWICK. Department of Vocational Education/Teacher Education (Kenya Project). Applications are being accepted for the following positions at the Kenya Technical Teachers College, based in Nairobi, Kenya, East Africa. Contracts are for a period of two years duration commencing August 1, 1980. Salary competitive and determined by qualifications. Overseas Allowance, subsidized housing and other fringe benefits as provided by the Canadian International Development Agency. Business Education: Accounting, General Business, Methods, and Pitman Specialist. Preferred Qualifications: Degree in Business Education, Experience in teacher education and five years experience. Technical/Vocational Subject Area: Electricity Construction, Electricity and Methods, Automobiles (two required), Plumber and Carpenter, Construction Plumbing. Preferred Qualifications: Journeyman's Papers, Industrial Experience (five years) Teaching experience. Preference will be given to those with a teaching degree. Letters of application, including curriculum vitae, photocopies of diplomas etc. and two recent references to be sent to: Dr. D.R. LeBlanc, Project Coordinator, K.T.T.C. Project, Division of Vocational Education, University of New Brunswick, P.O. Box 4400, Fredericton, N.B., E3B 5A3.

WORKSHOP-BIOETHICS

WESTMINSTER COLLEGE. Westminster Institute for Ethics and Human Values. Workshop on Bioethics. College teachers, medical and law school faculty, medical professionals, clergy, and others interested in the ethical, social, and legal issues of health care are invited to participate in a workshop sponsored by The Hastings Center, Institute of Society, Ethics and the Life Sciences, the The Westminster Institute for Ethics and Human Values. The workshop will be held at Westminster College at the University of Western Ontario in London, 6-12 July, 1980. Session topics include: Ethical Issues in Genetics, Ethical and Legal Issues in Reproductive Biology, Informed Consent, Human Experimentation, Comparative U.S. and Canadian Law and National Commissions, Physician-Patient Relationship, Health Policy, and Behaviour Control. The sessions will take place in the morning and afternoon with following small group discussions and informal evening discussions. For additional information contact: Michael D. Bayles, Director, Westminster Institute for Ethics and Human Values, Westminster College, London, Canada N6G 2M2 (519) 673-0046.

LATE ADS

UNIVERSITY OF GUELPH. Department of Family Studies. 1. Assistant Professor, tenure track. 2. Ph.D. degree in Sociology with research and teaching interests in social gerontology and human development. Candidates should have an interest in working within a multidisciplinary environment. 3. Undergraduate and graduate teaching in social gerontology. 4. Floor for Assistant Professor is \$18,800. 5. Send full curriculum vitae and names of three referees to: Dr. R.M. Barham, Chairman, Department of Family Studies, University of Guelph, Guelph, Ontario, N1G 2W1. 6. July 1, 1980 and subject to final budgetary approval. 7. Position open until filled.

UNIVERSITY OF GUELPH. Department of Family Studies. 1. Lecturer, part-time (2/3rds). 2. Masters degree in Early Childhood Education or equivalent and full-time experience in the supervision of preschool or day care programs. 3. Undergraduate teaching in Early Childhood Curriculum or Child Development together with supervision of half-day preschool program and associated undergraduate practicum. Candidates should have an interest in working within a multidisciplinary environment. 4. Floor for lecturer is \$15,995. 5. Send full curriculum vitae and names of three referees to: Dr. R.M. Barham, Chairman, Department of Family Studies, University of Guelph, Guelph, Ontario, N1G 2W1. 6. August 1, 1980 and subject to final budgetary approval. 7. Position open until filled.

UNIVERSITY OF GUELPH. Department of

Family Studies. 1. Assistant Professor. 2. Ph.D. degree in Sociology or related social science. 3. Teaching and research in marital and family dynamics, family theory, marital and family therapy and clinical supervision. Candidates should have an interest in working within a multidisciplinary environment. 4. Floor for Assistant Professor is \$18,800. 5. Send full curriculum vitae and names of three referees to: Dr. R.M. Barham, Chairman, Department of Family Studies, University of Guelph, Guelph, Ontario, N1G 2W1. 6. April 1, 1980 or to be negotiated, and subject to final budgetary approval. 7. Position open until filled.

MEMORIAL UNIVERSITY OF NEWFOUNDLAND. Department of Geology. Applications are invited for a faculty position in Metamorphic Petrology, commencing 1 July 1980 or as soon as possible thereafter. Candidates must be strongly field-oriented and committed to establishing a research programme in Labrador. Teaching duties will include senior undergraduate and graduate level courses in petrographic kinetic and thermodynamic aspects of metamorphic petrology. Applications at any rank will be considered, but the successful applicant must hold the Ph.D. degree at the time of appointment. Applications must include a detailed curriculum vitae and the names and addresses of three referees, should be sent by 15 March 1980 to: Dr. D. Skevington, Head, Department of Geology, Memorial University of Newfoundland, St. John's, Newfoundland, Canada, A1B 3X5 (telephone: (709) 753-1200, ext. 3142/3), from whom further particulars can be obtained.

MEMORIAL UNIVERSITY OF NEWFOUNDLAND. Chemistry. Applications are invited for a sabbatical replacement position involving teaching an advanced course in physical organic chemistry and a course in introductory general chemistry starting 1st September, 1980. Salary will be approximately \$17,000. This post is subject to the availability of funds. Applicants should submit a curriculum vitae and the names of three referees to: Dr. M. Newlands, Head, Department of Chemistry, Memorial University of Newfoundland, St. John's, Newfoundland, A1B 3X7.

DALHOUSIE UNIVERSITY. Director, Learning Resources (Study/Campus). Primary responsibility will be to co-ordinate existing audio visual facilities (including Language Laboratory, Television Services, Photography, A/V distribution/maintenance, and others as may be added) with a view toward the integration of these in a Learning Resources Centre. In consultation with the Vice-President (administration), the Director will prepare and administer a budget for all units within Learning Resources as well as oversee management of each, recommend acquisition of new material, co-ordinate part-time staff as required, and act as chief liaison with academic departments. In this capacity he/she will work through the Dean of Arts and Sciences and an Advisory Committee appointed by the Faculty of Arts and Sciences. The candidate should demonstrate proven organizational skills, some experience in university management, and a strong interest in service and some knowledge of educational technology and audio visual systems. Please reply in writing to: L. Vagianos, V.P. Administration, Arts and Administration Building, Dalhousie University, Halifax, Nova Scotia, B3H 4H6.

MOUNT SAINT VINCENT UNIVERSITY. Department of Sociology. Mount Saint Vincent University is accepting applications for a full-time position in Sociology to commence July 1, 1980. Responsibilities will be to teach undergraduate courses. Preference will be given to candidates with specializations in gerontology, social policy and/or criminology, but other areas will also be considered. Candidates should have a Ph.D. in sociology or be a social scientist. Rank and salary will be in accordance with qualifications and experience. Send curriculum vitae and the names of three referees to: Dr. Susan Clark, Dean of Human and Professional Development, Mount Saint Vincent University, Halifax, Nova Scotia, B3M 2J6. Applications will be accepted until the position is filled.

UNIVERSITY OF TORONTO. Department of Geography, Erindale College. Assistant Professor (Ph.D. required) or Lecturer for one-year contractually-limited appointment commencing July 1, 1980. Applicants must be able to teach two and one-half undergraduate courses in basic Economic Geography, Development and the Third World or Canada. Written applications to include curriculum vitae and names of three

referees. Apply to: Dr. John N.H. Britton, Chairman, Department of Geography, University of Toronto, Toronto, Canada, M5S 1A1 before April 1, 1980.

SIMON FRASER UNIVERSITY. Mathematics Department. Laboratory Instructor I. The Mathematics Department of Simon Fraser University has a vacancy in its Basic Mathematics Lab for a Laboratory Instructor I. This lab serves as a remedial mathematics resource centre for students in basic algebra and calculus courses as well as for other members of the university community. The Lab Instructor will be responsible for the coordination of the lab's teaching support activities, the supervision of teaching assistants employed in the lab, and administrative functions related to the lab's operation. Preferred qualifications are a Master's degree in Mathematics, with related teaching experience. However, those with exceptional qualifications and a Bachelor's degree will be considered. The appointment will commence during the Summer Semester 1980. Salary will be commensurate with qualifications and experience. An excellent benefit package is available. The application deadline is March 1, 1980. Those interested in applying for this position are invited to submit resumes, transcripts and three letters of references to: Dr. M. Singh, Chairman, Mathematics Department, Simon Fraser University, Burnaby, B.C. V5A 1S6.

CARLETON UNIVERSITY. School of Commerce. Visiting associate or full professor, or full time assistant or associate professor in (i) accounting, (ii) systems, (iii) management processing, (iii) management science. 2. Ph.D. 5. Application should be sent to: Dr. W.L. Weber, Chairman, Recruiting Committee, School of Commerce, Carleton University, Ottawa, Ontario, K1S 5B6. 6. Starting July 1, 1980. Applications are subject to budgetary approval.

UNIVERSITY OF MANITOBA. Department of Physics, Postdoctoral Fellowship or Research Associateship. Applications are invited from persons with experience in low or intermediate energy nuclear physics. A good working knowledge of computer systems, electronics and computers and nuclear cyogenics is required. The successful candidate will be engaged in the University of Manitoba's research program in intermediate energy nuclear physics using the TRIUMF accelerator. Renewal appointments are made initially for a one year term, the commencement date being flexible. The successful candidate will be eligible for a travel allowance. Remuneration will depend on qualifications and previous experience. Applications including curriculum vitae, bibliography and the names of three referees should be sent to: Dr. W.T.H. van Oers, Department of Physics, University of Manitoba, Winnipeg, Manitoba, R3T 2N2.

UNIVERSITY OF WATERLOO. Department of Biology. Applications are invited for the position of Assistant Professor in Biology. Qualifications include Ph.D., specializing in quaternary ecology. Duties include teaching in area of specialization at undergraduate and graduate levels and developing a program of research in quaternary ecology, with emphasis on palynology. Salary minimum for 1979-80 is \$18,400 (Assistant Professor). Those interested should send applications to: Dr. J.K. Morton, Chairman, Department of Biology, University of Waterloo, Waterloo, Ontario, Canada, N2L 3G1. Effective date of appointment is July 1, 1980. Closing date for receipt of applications is April 30, 1980. Note: This appointment is for a 2-year definite term (subject to availability of funds). First consideration will be given to those applicants who at the time of application are legally eligible to work in Canada for the period covering this position.

UNIVERSITY OF WATERLOO. Department of Electrical Engineering. Applications are being accepted for the position of Assistant Professor in one of the following areas: 1) control theory, 2) digital hardware and computers, 3) circuit theory and 4) microwaves and antennas. Applicants must hold a doctorate and some industrial experience would be considered an asset. The position will involve undergraduate and graduate teaching and a graduate student supervision. The successful applicant will be expected to pursue an active program of research compatible with departmental interests. The position will be open until filled, but an appointment for September 1979 is anticipated. The salary will be commensurate with experience and qualifications. A detailed curriculum vitae, a statement of research and teaching interests and the names of three referees should be sent to: Chairman,

Department of Electrical Engineering, University of Waterloo, Waterloo, Ontario, N2L 3G1, Canada. Subject to the availability of funds. First consideration will be given to those applicants who at the time of application are legally eligible to work in Canada for the period covered by this position.

UNIVERSITÉ DE WATERLOO. Département de français. Le Département de français de l'Université de Waterloo fait appel aux candidatures en vue de l'attribution d'un poste de Professeur Adjoint de langue française et de linguistique appliquée. La durée du contrat sera d'un an ou de trois ans, selon les qualifications et états de service du candidat. Les fonctions comportent l'enseignement de la langue française aux étudiants du premier cycle et des cours de linguistique romane (française) au niveau supérieur de baccalauréat et à celui de la maîtrise. Le titulaire agira en outre en tant que conseiller pour l'utilisation rationnelle du laboratoire de langue et dans le domaine des expériences d'enseignement partiellement informatisé. Le traitement minimum du Professeur Adjoint est de (\$866 de 1979-80) 18,400; la rémunération réelle sera établie en fonction des qualifications et états de service du candidat. Étude de l'application au 1er juillet 1980. Les demandes doivent être envoyées au plus tard le 29 février 1980 à l'adresse suivante: Professeur J.R. Dugan, Directeur du Département de français, Université de Waterloo, Waterloo, Ontario, Canada, N2L 3G1. Cette offre est sans engagement formel jusqu'à confirmation des décisions nécessaires en matière d'allocation de crédits. Les demandes émanant des candidats en possession d'une autorisation légale, valable pendant toute la durée de la période considérée pour ce poste, d'occuper au Canada un emploi rémunéré, seront envisagées en priorité.

UNIVERSITY OF WATERLOO. Department of Health Studies. 1. Assistant or associate professor (pending funding). 2. Applicant should have a Ph.D. or equivalent in the biomedical or behavioral sciences and an established research record. 3. Teaching undergraduate and graduate courses in disease process, and such areas as expertise as psychosomatics, physiology of chronic disease, or biosocial determinants of health status. 4. Negotiable. 5. J.A. Best, Ph.D., Chairman, Department of Health Studies, University of Waterloo, Waterloo, Ontario, Canada, N2L 3G1. 6. September 1, 1980 or sooner. February 1, 1980. First consideration will be given to those applicants who at the time of application are legally eligible to work in Canada for the period covered by this position.

UNIVERSITY OF WATERLOO. Department of Management Sciences. Applications are being accepted for a position of Assistant Professor in Organizational Behavior/Management Sciences. Qualifications include Ph.D. in Organizational Behavior/Management Sciences. Duties include teaching courses, supervision of graduate students, and continuing research activities. Salary floor at Assistant Professor level is \$18,400. Those interested should send applications to Dr. D.W. Conrath, Chairman, Department of Management Sciences, University of Waterloo, Waterloo, Ontario, N2L 3G1. Effective date for appointment is September 1, 1980. Closing date for receipt of applications is April 30, 1980, or until position is filled (subject to the availability of funds). First consideration will be given to those applicants who at the time of application are legally eligible to work in Canada for the period covered by this position.

UNIVERSITY OF WATERLOO. Department of Management Sciences — Applied Statistics. Applications are being accepted for a position of Assistant Professor in Management Sciences. Qualifications include Ph.D. with competence in applied statistics and information systems (simulation interest would also be helpful). Experience in engineering or allied disciplines is desirable as the appointment is within the Engineering Faculty. Duties include teaching courses, supervision of graduate students, and continuing research activities. Salary floor at Assistant Professor level is \$18,400. Those interested should send applications to Dr. D.W. Conrath, Chairman, Department of Management Sciences, University of Waterloo, Waterloo, Ontario, N2L 3G1. Effective date for appointment is May 1, 1980 or later. Closing date for receipt of application is February

29, 1980 or once the position is filled (subject to the availability of funds). First consideration will be given to those applicants who at the time of application are legally eligible to work in Canada for the period covered by this position.

UNIVERSITY OF WATERLOO. Department of Political Science. Lecturer or Assistant Professor. Qualifications include Ph.D. or equivalent. Duties include teaching in public administration and public policy in introductory politics, and one other area, possibly at the graduate level (M.A.) salary minimum for assistant professor in 1979-80 was \$18,400. Interested persons should send applications to Dr. Robert J. Williams, Chairman, Department of Political Science, University of Waterloo, Waterloo, Ontario, N2L 3G1. Effective date of appointment is July 1, 1980. Closing date for receipt of applications is March 1, 1980. First consideration will be given to those applicants who at the time of application are legally eligible to work in Canada for the period covered by this position. This appointment is subject to budgetary decisions.

UNIVERSITY OF WATERLOO. Department of Psychology. Applications are being accepted for the position of Assistant, or possibly Associate Professor in Clinical Psychology. Applicants must have a strong commitment to research, preferably but not necessarily in the areas of child psychopathology, psychotherapy, or community psychology. Duties include establishing a strong, independent research program, teaching at the graduate and undergraduate levels, and research and clinical supervision of graduate students. The salary is competitive; final appointment depends on availability of funds. Persons eligible for employment in Canada at the time of application will receive first consideration. Direct a complete vitae and names and addresses of at least three references to Dr. T. Gary Waller, Chairman, Department of Psychology, University of Waterloo, Waterloo, Ontario N2L 3G1. Applications will be accepted until February 15, 1980. If the position is filled, the appointment will begin by September 1, 1980.

UNIVERSITY OF WATERLOO. Department of Recreation. 1. Assistant or Associate Professor in Recreation Management. 2. Earned doctorate or its near completion in related discipline. 3. Ability to successfully supervise student theses and honors projects with a broad interdisciplinary view to graduate and undergraduate instruction and continued involvement and participation in professional organizations with a demonstrated competence and commitment to scholarship. 4. Assistant Professor (pending funding). 5. Associate Professor (minimum \$23,900). Salary commensurate with qualifications and experience. 5. Dr. David Ng, Chairman, Department of Recreation, University of Waterloo, Waterloo, Ontario, N2L 3G1. 6. Subject to the availability of funds. First consideration will be given to those applicants who at the time of application are legally eligible to work in Canada for the period covered by this position.

UNIVERSITY OF SASKATCHEWAN. Department of Music. Position in Music Education. Requirements: 1. Background in elementary and secondary schools. 2. Keyboard skills. 3. Background in choral and instrumental music. 4. Conducting experience. 5. M.Mus. in Mus.Ed. (or a solid M.Ed. in Mus.Ed.) with post Masters work and/or equivalent professional achievement highly desirable. Duties: 1. To teach the basic elementary and secondary music methods classes. 2. To supervise the department's practice teaching program. 3. To act as liaison with the schools. 4. To assist in such areas as applied music (individual and organization) or theory or history or music literature. Appointment: 1. Effective July 1, 1980. 2. Rank to be Assistant Professor, salary commensurate with qualifications and experience. 3. Portable position. Applications: All applications should be sent to Dr. D. Kaplan, Head, Department of Music, University of Saskatchewan, Saskatoon, Saskatchewan, S7N 0W0. A Sub-Committee of the Department's Search Committee will carefully screen all applications. Candidates may also wish to submit a recent performance tape. Closing date for applications: April 30, 1980.

UNIVERSITY OF GUELPH, ONTARIO VETERINARY COLLEGE. Department of Clinical Studies. A faculty position in the area of Ophthalmology is available in the Department of Clinical Studies, Ontario Veterinary College, University of Guelph. The main duties of the applicant will be to

teach Ophthalmology at the undergraduate and graduate level and to participate as a clinician in the Veterinary Teaching Hospital. The applicant must be eligible for licensure in the Province of Ontario. An advanced degree, Board Certification or eligibility for Board Certification and teaching experience is required. Salary and rank will be commensurate with experience and qualifications. Selection of the successful applicant will be made on recommendation of a selection committee. The position is subject to budgetary approval. Enquiries regarding the position can be made to: Dr. M.R. Wilson, Chairman, Department of Clinical Studies, Ontario Veterinary College, University of Guelph, Guelph, Ontario, Canada, N1G 2W1.

LAURENTIAN UNIVERSITY. School of Commerce and Administration. Applications are invited for faculty positions in the School of Commerce and Administration of Laurentian University in September, 1980. Faculty positions are open in all areas: accounting, finance, organizational behaviour, operations management, small business and general management. Rank and salary will be competitive and commensurate to qualifications and experience. Applicants holding a doctorate degree are preferred but applicants with other qualifications and relevant experience will be considered. The effective date of appointment is July 1, 1980 or later by mutual agreement. Applications and requests for further information should be sent to Professor David J. Hildrup, Director, School of Commerce and Administration, Laurentian University, Sudbury, Ontario, P3E 2C6.

UNIVERSITY OF LETHBRIDGE. Department of Dramatic Arts. 1. One position at the Assistant Professor level (subject to the availability of funding). 2. Candidates with academic degrees and relevant professional experience will be given preference. 3. Duties will be to instruct the undergraduate program in Stagecraft, State Management, Lighting and Design and technical direction of Department-sponsored productions — both Faculty and Student. 4. Salary Schedule (1978-79): Assistant Professor — \$20,446-\$28,616. 5. Applications, including a curriculum vitae, transcripts, three letters of reference and brief statement outlining their approach to the teaching of their subjects. Larry E. Weaver, Associate Dean, Division of Fine Arts & P.E., University of Lethbridge, 4401 University Drive, Lethbridge, Alberta, T1K 3M5. Tenure track position. Probationary appointment for one year beginning 1 July 1980. 7. Closing date: 31 March 1980.

LAKEHEAD UNIVERSITY. Department of Sociology. Applications are invited for a tenure appointment in the Department of Sociology. Rank to associate professor level open, depending on qualifications and experience. Ph.D. and appropriate research experience required. Expertise in community studies, social change and development are sought but other areas will be considered. Applications including curriculum vitae, a list of publications, and references should be sent to Mr. Donald E. Ayre, Secretary of the University, Lakehead University, Thunder Bay, Ontario, P7B 5E1.

UNIVERSITY OF GUELPH. Department of Chemistry. Manager of Southwest Ontario High Field NMR facility, effective May 1, 1980. Overall management of a service based on a Bruker WH-400 Multinuclear Cryospectrometer, including schedule of time, consultation with users, supervision of an operator, supervision of maintenance and repairs, as well as teaching a graduate or upper level course in his/her specialty. Opportunities for collaborative and other research. A Ph.D. degree in Chemistry or Physics and experience in FT NMR techniques are required. Salary negotiable but in the Assistant Professor range, dependent on experience and qualifications. Position subject to final budgetary approval. Apply to E.G. Janzen, Chairman, Department of Chemistry, University of Guelph, Guelph, Ontario, N1G 2W1, with full curriculum vitae.

MCGILL UNIVERSITY. Department of Mechanical Engineering. Assistant or Associate Professor in one of the areas of Fluid Mechanics, Energy or Solid Mechanics. Tenure track appointment, September 1980 or earlier. Ph.D. required, teaching and research duties. Salary commensurate to experience. Language:

English. Twelve-month minimum salary for Assistant Professors: \$22,000; for Associate Professors: \$26,000. Candidates please send c.v. and names of three referees to: Professor Michael P. Paldoussis, Department of Mechanical Engineering, McGill University, 817 Sherbrooke Street W., Montreal, Quebec, H3A 2K6, Canada.

SAINT MARY'S UNIVERSITY. Department of Geology. Applications are invited for a one-year appointment, starting September 1, 1980 in either of the following areas: Igneous and Metamorphic Petrology or Petroleum Geology/Stratigraphy. Ph.D. is required; experience an asset. Submit curriculum vitae and names of three referees to: Chairman, Geology Department, Saint Mary's University, Halifax, Nova Scotia, Canada, B3H 3C3.

UNIVERSITY OF ALBERTA. Department of Chemistry. Summer Session Instructorship. The Department of Chemistry at The University of Alberta invites applications for an instructorship in Organic Chemistry for the summer session 1980. Professional experience as a university staff member teaching organic chemistry is required. Seminar participation in research, and evidence of a currently active research program will be evaluated. Applications with a curriculum vitae including a publication list and names of two professional referees should be sent to: Dr. S.G. Davis, Associate Chairman, Department of Chemistry, The University of Alberta, Edmonton, Alberta, T6G 2G2 by February 29, 1980. The University of Alberta is an equal opportunity employer.

YORK UNIVERSITY. Department of Computer Science. The Department of Computer Science, York University, seeks applications for a contractually limited lecturer or assistant professor position (subject to final budgetary approval). Minimal qualifications: M.A. or M.Sc. Computer Science, and undergraduate teaching experience. Duties involve teaching in undergraduate programme and participation in curriculum development. Experience in software development is an asset. Micros would be an asset. Length of contract open to negotiation. Rank and salary dependent on qualifications and experience. Submit c.v. and names of 3 references to Prof. P.H. Roosen-Runge, Chairman, Department of Computer Science, York University, 4700 Keele Street, Toronto (Downsview), Ontario, M3J 1P3, by February 15, 1980.

YORK UNIVERSITY. Department of Computer Science. York University seeks applications for a 1-year visiting position at the assistant or associate professor level (subject to final budgetary approval). Duties will include undergraduate teaching and research. Ph.D. preferred with research activity in value-centered areas of computer science such as artificial intelligence, alternative systems or social aspects of computer-based communications. Rank and salary dependent on qualifications and experience. Submit c.v. and names of 3 references to Prof. P.H. Roosen-Runge, Chairman, Department of Computer Science, York University, 4700 Keele Street, Toronto (Downsview), Ontario, M3J 1P3, by March 15, 1980.

UNIVERSITY OF SASKATCHEWAN. Department for the Education of Exceptional Children. College of Education. Summer Session 1980. Wanted: Sessional Lecturer to teach two half classes: EdEx 575A Speech Reading; EdEx 578B The Teaching of Elementary School Subjects to the Hearing Impaired. When: Six weeks. Where: Department for the Education of Exceptional Children, College of Education, University of Saskatchewan, Saskatoon, Saskatchewan, S7N 0W0, Canada. To Apply: Applications, together with a curriculum vitae and the names of three referees should be addressed to: Dr. David Hlrburn, Head, Department for the Education of Exceptional Children, College of Education, University of Saskatchewan, Saskatoon, Saskatchewan, S7N 0W0. Applications will be accepted until the position is filled.

UNIVERSITY OF SASKATCHEWAN. Department of History. The Department of History invites applications for a two-year appointment in early modern French history for the 1980-81 and 1981-82 academic years. Responsibilities include the teaching of a class on the historic foundations of modern European civilization at the introductory level and classes in early modern French history at advanced undergraduate and graduate levels. Rank will be at the Lecturer

or Assistant Professor level. Salary will be commensurate with qualifications and experience. Applications, together with a curriculum vitae and the names of three referees, should be addressed to Professor T.D. Regehr, Head, Department of History, University of Saskatchewan, Saskatoon, Saskatchewan, S7N 0W0. Applications accepted until position is filled.

UNIVERSITY OF SASKATCHEWAN. Department of Microbiology. Department of Microbiology, University of Saskatchewan, has a tenurable vacancy for an Assistant Professor, field of General Microbiology. Appointment to commence July 1, 1980. Salary to be commensurate with experience. Deadline for receipt of applications March 31, 1980. Apply to: Dr. D. Eldinger, Head, Department of Microbiology, University of Saskatchewan, Saskatoon, Saskatchewan, S7N 0W0.

UNIVERSITY OF SASKATCHEWAN. College of Pharmacy. Applications are invited for a position of Assistant Professor in Pharmacology. The applicant should have a background of training in biopharmaceutics, pharmacokinetics or pharmacology to the Ph.D. level. Responsibilities include teaching undergraduate and graduate classes, the development of a research program and other activities that may be assumed or assigned in relation to the effective functioning of a health sciences professional college. Filling of this position is subject to budgetary confirmation expected by March 1980. Applications should be forwarded, together with a curriculum vitae and the names of three referees to: Dean B.R. Schnell, Ph.D., College of Pharmacy, University of Saskatchewan, Saskatoon, Saskatchewan, S7N 0W0.

UNIVERSITY OF SASKATCHEWAN. College of Home Economics, Family and Consumer Studies Division. Position: Teaching position in Family Studies or Consumer Studies. Full-time, twelve-month appointment. Rank: Professor or Associate Professor. Qualifications: Ph.D. in Family or Consumer Studies, or equivalent established research record in some area of Family or Consumer Studies. Previous university teaching experience. Previous study or work experience within a home economics program setting preferred. Responsibilities: Assume responsibility for course development in Family and Consumer Studies Division. Teach classes in Family or Consumer Studies. Identify research needs and develop research in area of interests. Advise students. College and University committee work as appropriate for position. Salary: Commensurate with qualifications and experience. Effective Date of Appointment: July 1, 1980. Apply to: Professor Heather Maclean, Chairman of Search Committee, College of Home Economics, University of Saskatchewan, Saskatoon, Saskatchewan, S7N 0W0.

UNIVERSITY OF TORONTO, SCARBOROUGH COLLEGE. Chemistry Department. Chemistry Group invites applications for Assistant Professor, one or two year limited term appointments available July or September 1, 1980. Doctorate required with expertise in Physical Chemistry or Chemical Physics. Duties include undergraduate teaching and research. Send curriculum vitae and names of three referees to Chairman, Physical Sciences Division, Scarborough College, West Hill, Ontario, Canada, M1C 1A4.

UNIVERSITY OF TORONTO. School of Architecture. 1980-81. 1) To teach architectural design studio (integrating component subjects such as history and construction). 5-year B.Arch. professional program. Part-time and full-time, contractually limited appointments. Salaries from \$18,000 to \$30,000 depending on qualifications and experience. 2) To develop and teach construction component in 5-year professional B.Arch. program and to participate in architectural design studio. Deadline: Professor, tenure-stream appointment. Salary from \$20,300 depending on qualifications. B.Arch. or M.Arch.; previous professional and teaching experience. Apply, including vitae and 2 letters of recommendation to: Professor Blanche L. van Gilder, Room 230 College Street, Toronto, Ontario, M5S 1A1, by April 15, 1980.

MEMORIAL UNIVERSITY OF NEWFOUNDLAND. Department of Biochemistry. Applications are invited for a position of Assistant Professor in Biochemistry. The appointment is subject to availability of funds for the 1980-81 session only. The applicant must have a Ph.D. in Biochemistry and a few years of post-doctoral experience. The candidate is expected to teach undergraduate courses in Biochemistry and

would have opportunity to do research. Application with three letters of reference should be submitted by March 31, 1980, to: Dr. S. Mookerjee, Professor and Chairman, Department of Biochemistry, Memorial University of Newfoundland, St. John's, Newfoundland, Canada, A1B 3X9.

UNIVERSITY OF SASKATCHEWAN. Department of Agricultural Engineering. The Department of Agricultural Engineering, University of Saskatchewan, has a teaching and research position open in the processing and/or machinery area. This full time position will involve both teaching and research in the analysis and design of agricultural systems for more effective application of equipment for agricultural production. Some teaching of general engineering classes will also be required. Applicants should have a Ph.D. degree in Agricultural Engineering or other appropriate engineering discipline with teaching and research experience. Rank and salary commensurate with training and experience. Closing date for application: April 15, 1980. Applicants should forward a curriculum vitae with the names of three referees to: Dr. G.C. Zoerb, Agricultural Engineering Department, University of Saskatchewan, Saskatoon, Saskatchewan, S7N 0W0, Canada.

UNIVERSITY OF SASKATCHEWAN. Department of Educational Foundations. Position: Assistant Professor in Educational Foundations. Current departmental needs focus on sociology of education and philosophy of education. However, all applicants are welcome. Qualifications: Doctorate or certificate or near completion. Teaching certificate and teaching experience in elementary or secondary school desirable. Duties include teaching interdisciplinary and/or specific courses at the undergraduate and graduate levels, supervision of student teachers and graduate teachers; research. Salary: Negotiable, depending on qualifications and experience. Apply to: Ormond McKague, Head, Department of Educational Foundations, University of Saskatchewan, Saskatoon, Saskatchewan, S7N 0W0. Effective Date: July 1, 1980. Closing Date for Receipt of Applications: March 31, 1980 or when position is filled. This position is subject to budgetary confirmation.

UNIVERSITY OF SASKATCHEWAN. Department of Educational Foundations. Position: Sabbatical replacement (10 months) at the rank of lecturer or assistant professor. Qualifications: Post-graduate degree. Teaching certificate and extensive teaching experience in elementary and/or secondary schools. Duties consist of supervising student interns in the College of Education's Extended Practicum Programme. Salary: Negotiable, depending on qualifications and experience. Apply to: Ormond McKague, Head, Department of Educational Foundations, University of Saskatchewan, Saskatoon, Saskatchewan, S7N 0W0. Effective Date: September 1, 1980. Closing Date for Receipt of Applications: March 31, 1980 or when position is filled.

UNIVERSITY OF SASKATCHEWAN. Department of Curriculum Studies. The College of Education invites applications for a Term Appointment (September 1, 1980 - June 30, 1981) available in Science Education in the Department of Curriculum Studies. Qualifications: Doctorate or currently completing doctoral program; background and experience in Science Education preferably at the Elementary level. In addition, training and experience in Reading and/or French is desirable. Responsibilities: Teach undergraduate courses in Science Education; supervise student teachers, and teach general methods courses. Rank and Salary: Assistant Professor. Commensurate with experience and qualifications. Employment Date: September 1, 1980. Deadline: April 30, 1980. Apply to: Dr. J.L. Gajadharsingh, Head, Department of Curriculum Studies, College of Education, University of Saskatchewan, Saskatoon, Saskatchewan, S7N 0W0.

UNIVERSITY OF SASKATCHEWAN. Department of Curriculum Studies. The College of Education invites applications for a full time position in Mathematics Education in the Department of Curriculum Studies. Qualifications: Doctorate or currently completing doctoral program; background and experience in Mathematics Education - preferably at the Elementary level. Analysis, teaching, and Clinical Supervision. Responsibilities: 1) Teach undergraduate and graduate courses in Mathematics Education, supervise interns, teach general methods courses, conduct micro-teaching labs and participate actively in curriculum

development and in-service work within the province. 2) Advise graduate students. Rank and Salary: Assistant Professor. Commensurate with experience and qualifications. Employment Date: July 1, 1980. Deadline: March 1, 1980. Apply to: Dr. J.L. Gajadharsingh, Head, Department of Curriculum Studies, College of Education, University of Saskatchewan, Saskatoon, Saskatchewan, S7N 0W0. Note: Position is subject to budgetary confirmation.

NOVA SCOTIA TECHNICAL COLLEGE. Department of Mechanical Engineering. The Nova Scotia Technical College invites applications for two faculty positions in the areas of Heat Transfer/Fluid Mechanics and Machine Design. Applicants should possess a doctorate in mechanical engineering. Responsibilities include undergraduate and graduate teaching and research. Applicants should send curriculum vitae and names of at least three referees to: Dr. J.L. Warner, Head, Department of Mechanical Engineering, Nova Scotia Technical College, P.O. Box 1000, Halifax, Nova Scotia, B3J 2X4.

UNIVERSITY OF GUELPH. Department of Pathology. Three faculty positions in the Department of Pathology. Responsibilities involve undergraduate and graduate teaching and experience in diagnostic pathology. Preference will be given to candidates with advanced degrees who have experience in the integumentary, musculoskeletal and respiratory systems. One position is available immediately and July 1, 1980. Another position is available September 1, 1980. Salary and rank negotiable. These positions are subject to budgetary approval. Please respond to Dr. V.E. Valli, Chairman, Department of Pathology, Ontario Veterinary College, University of Guelph, Guelph, Ontario, N1G 2W1.

BRANDON UNIVERSITY. Department of Geography. Applications are invited for a two-year position of Cartographer beginning September 1, 1980. Candidates must have a Master's degree in Cartography or Geography with a specialization in Cartography or equivalent qualifications required. Previous work and teaching experience desirable. Duties include the preparation of cartographic material for teaching and research; teaching of Cartography courses; photographic lab work; supervision of the Department Map Library; and management of related Departmental equipment. The position is at the rank of Professional Associate I or II depending on qualification and experience. Current salary for Professional Associate I: \$14,550; for Professional Associate II: \$18,300 (both salary floors are effective until March 31, 1980). Applications with detailed curriculum vitae and samples of cartographic work should be submitted to Dr. C. Stadel, Chairman, Department of Geography, Brandon University, Brandon, Manitoba, R7N 4A6. Phone: (204) 728-9520, Ext. 366. Candidates should also request three referees to write the Chairman of the Department of Geography. Applications will be accepted until February 29, 1980, or until the position is filled.

UNIVERSITY OF MANITOBA. Department of Sociology. 1. Applications are invited for a seasonal appointment, at Lecturer or Assistant Professor level. 2. Completed Ph.D. preferred. 3. Canadian citizens, landed immigrants and others eligible for employment in Canada at the time of application are especially invited to apply. 4. Specialization in the area of Criminology preferred. Other areas of specialization will also be considered. 5. To commence September 1, 1980. Send vitae including names of at least three referees to: Professor R. Kuennen, Chairman, Recruitment Committee, Department of Sociology, University of Manitoba, Winnipeg, Manitoba, R3T 2N2.

UNIVERSITY OF OTTAWA. Department of Economics. The department requires an assistant or associate professor (subject to budgetary approval). Bilingualism (French-English) essential. Candidate must have a specialization in one or more of the following fields: history of economic thought; Canadian economic history; public finance; industrial organization and human resources. Salary commensurate with qualifications. Submit curriculum vitae and names of three referees to Ms. Suzanne Murphy, Administrative Assistant, Department of Economics, University of Ottawa, Ottawa, Ontario, K1N 6N5. Closing date for application is March 1, 1980. Appointment effective July 1, 1980.

UNIVERSITY OF WESTERN ONTARIO. Faculty of Music. Rank—Visiting lecturers, sub-

ject to availability of funds. To qualify applicants must possess an advanced degree. Duties will be to teach one or more of Undergraduate Theory, Orchestration, Composition, "Music of the World" (a course for non-music majors). Salary is \$1,200 per month. Dates of Appointment - September 1, 1980 - April 30, 1981; September 1, 1980 - December 31, 1980; and January 1, 1981 - April 30, 1981. The deadline for applications - when position filled. Please send applications to: Dr. Jack Behrens, Chairman, Theory and Composition Department, Faculty of Music, The University of Western Ontario, London, Ontario, N6A 3K7.

MOUNT SAINT VINCENT UNIVERSITY. Department of Home Economics. Mount Saint Vincent University invites applications for sabbatical positions in its expanding home economics department in the areas of family and consumer studies; home economics education, nutrition and food science. Duties will include teaching graduate and undergraduate courses; developing and initiating new programs; pursuing an active program of research compatible with department interests. Preference will be given to candidates with a Ph.D. or near-completion and teaching experience in the appropriate specialization. Rank and salary will be according to qualifications and experience. Interested applicants should send their curriculum vitae and the names of three referees to Dr. Susan Clark, Dean of Human and Professional Development, Mount Saint Vincent University, Halifax, Nova Scotia, B3M 2J6. Appointments to begin July 1, 1980.

MOUNT SAINT VINCENT UNIVERSITY. Department of Family Studies. Mount Saint Vincent University invites applications for a position in family studies in its Home Economics Department. Duties will include teaching graduate and undergraduate courses; developing and initiating new programs; pursuing an active program of research compatible with department interests. Preference will be given to candidates with a Ph.D. or near-completion and ability to teach in a home economics education programme. Rank and salary will be according to qualifications and experience. Interested applicants should send their curriculum vitae and the names of three referees to Dr. Susan Clark, Dean of Human and Professional Development, Mount Saint Vincent University, Halifax, Nova Scotia, B3M 2J6. Appointment to begin July 1, 1980.

MOUNT SAINT VINCENT UNIVERSITY. Department of Education (Child Studies). Mount Saint Vincent University, Department of Education (Child Studies) will make one and possibly two appointments to its faculty in child studies. The department offers an undergraduate degree in child studies and a certificate in child development in addition to B.Ed. and graduate programmes. Preference will be given to candidates who can teach within the following areas: developmental disorders, assessment and programming, motor development and perceptual-motor training, language disorders, methods in early childhood education. Duties also include clinical supervision of students. Send curriculum vitae and the names of three referees to Dr. Susan Clark, Dean of Human and Professional Development, Mount Saint Vincent University, Halifax, Nova Scotia, B3M 2J6. Appointment will begin July 1, 1980.

MOUNT SAINT VINCENT UNIVERSITY. Department of Anthropology. Mount Saint Vincent University is accepting applications for a leave replacement in Anthropology to commence July 1, 1980. Responsibilities include teaching undergraduate courses in Cultural Anthropology. Areas open. Preference will be given to candidates with a Ph.D. or near completion in Anthropology, and some teaching experience. Rank and salary will be in accordance with qualifications and experience. Send curriculum vitae and the names of three referees to Dr. Susan Clark, Dean of Human and Professional Development, Mount Saint Vincent University, Halifax, Nova Scotia, B3M 2J6. Applications will be accepted until the position is filled.

UNIVERSITY OF NEW BRUNSWICK. School of Administration. Assistant Professor: Accounting; Business and Society; Finance; Industrial Relations; Management - Organizational Behaviour; Marketing; and Policy; Ph.D. or Ph.D. candidate. Duties involve undergraduate teaching and research. Salary open. Appointments effective July 1, 1980 (possibly January 1, 1980) Director, School of Administration, University of New Brunswick, Fredericton, New Brunswick, E3B 5A3.

ECONOMIC BENEFITS. BENEFICES ECONOMIQUES

Reprinted from THE GLOBE AND MAIL.

One problem with research and development incentives in Canada is that the system tends to be biased on the side of large corporations.

That, probably, is a consequence of an approach that emphasizes the total value of R and D expenditures. For example, Canada is estimated to be spending on R and D an amount equal to about 1 per cent of gross national product.

Federal government policy is aimed at increasing the percentage to 2.5 per cent, evidently in the belief that if this level of expenditures can be reached, Canada will then be technologically competitive with other industrial nations. Obviously, the most direct and simple way of raising total expenditures is to encourage large corporations, which are the biggest spenders in this field, to step up their research and development spending.

It should be said that, even for the large companies, the existing incentives may not be enough to bring about a major increase in research and development. Robert C. Scrivener, chairman of Northern Telecom Ltd., said recently that Canada's incentive program still is inadequate when placed against the massive efforts of competing countries. "As things stand today," he said flatly, "Canada's incentive programs for R and D are not competitive with those of the world's major industrialized countries."

Widespread support

Mr. Scrivener wants Ottawa to raise the research and development tax credit to 25 per cent, from 10 per cent. This idea has widespread support in the business community, and it does seem necessary if the Government hopes to arrest the relative decline in Canada's research effort.

It is not a sufficient answer. Existing incentive programs do nothing to help the individual inventor — traditionally, the most prolific source of innovations and fresh approaches. If the objective is merely to raise the proportion of GNP spent on R and D for purposes of international prestige, then the Government may be able to limit its efforts to an elaboration of past policies.

But if the intention is to create a genuinely innovative environment in this country, the authorities cannot afford to continue ig-

Individuals should get R and D tax breaks too

by Ronald Anderson

nor the private inventors.

Robert A. Dunn, president of Radun Product Planning Group Ltd. of Toronto, says that 80 per cent of all basic inventions during the past century have come from private inventors and small businesses that, most commonly, have been established by inventors. He calculates that there are 20,000 inventors in Canada.

Mr. Dunn said in a letter to federal cabinet ministers that government programs are not available to help private inventors. "In fact, it appears that the Government does not even have a policy with respect to inventors."

He said that, in the initial stages of development when the inventor is most in need of help and guidance, the entrepreneur has no means of support other than his own resources and those of his family and close friends.

"If programs and funds were available...for the inventor which would enable him to solicit the services of professionals, the evaluation, prototyping and packaging of (his) concepts could be handled easily. There are sufficient private funds available to take the concepts from this stage to viable new ventures."

Mr. Dunn complained that, after 18 months of efforts to discuss the problems with government officials, he had been unable to arouse any interest.

Midland Doherty Ltd., a Toronto investment house, has developed a proposal that is designed to overcome the bias in the incentive system that allows corporations to write off all R and D costs (plus an extra 50

per cent of spending above a base level) against income from related business. But that requires individuals to pay for research and development out of after-tax dollars.

The firm proposes as a first step that the legislation should be changed to permit individuals to deduct all R and D investments against personal income, and to make such individuals eligible for an additional 66.6 per cent allowance similar to the allowance given to people who invest in frontier oil and gas exploration.

Secondly, the investment house proposes that investment in an eligible R and D project which has been fully funded should be deductible from all other income in the year the investment is made by the individual rather than in the year in which the funds

are drawn down as the project proceeds.

Bridge for investors

Finally, the deductible research and development costs for an individual would include any investment made in the shares of what Midland Doherty calls an Eligible Research Corp. This would be a federally incorporated corporation funded by private investors, and approved by the Government as a vehicle for pursuing research and development.

What is envisaged here is a new type of corporation, that would be capitalized at perhaps \$4-million, and that would finance the research and development work of two or three inventors with promising ideas. The inventors and investors would share in the ownership of the corporation.

The advantage of such a scheme is that it would provide a bridge that does not now exist between potential investors and individual inventors. It would provide sufficient financing to carry a project through to completion, and the corporation would be able to provide the professional financial, legal, packaging, and marketing assistance to transform a good idea into a marketable product.

Matthew Gaasenbeek, vice-president of Midland Doherty believes the tax shelter attractions of the plan would attract \$150-million to \$200-million in private investment in the proposed research corporations within two years.

Catching up

Reprinted from the VANCOUVER SUN.

The motto of the University of British Columbia is in Latin: Tuum est. Roughly translated, it means: Okay, all you spoon-fed students, it's up to you. The information is here, now come and get it.

But a problem has developed. The information is no longer necessarily there. That has been the gist of remarks made by UBC president Douglas Kenny over the past few years, as he has become increasingly vocal about inadequate financing of post-secondary education.

This year his statements, outlining something of a blueprint for the university's future, touched an old Canadian nerve: research and development.

There have long been many educated, concerned voices warning us that our research and development is badly underfinanced. Between 1970 and 1979, federal government support for research and development fell from 1.62 per cent to 0.9 per cent of the gross national product.

The United States, Germany, Japan, and France all spend about twice as much money on research and development as do Canadian universities, industries, and government. In 1978 the Organization for Economic Cooperation and Development published a list of the 110 most important technical discoveries since the Second World War. Not one was made in Canada.

Mr. Kenny is not the only university president hungry for a more productive role for universities. K. George Pedersen, president of Simon Fraser University, recently told the Vancouver Kiwanis Club that universities must become involved with

business, industry, and government to make full use of universities' research and development potential.

The problem is not an academic one. The level of applied research in a country has a significant effect on its economic health. Canadians are often called hewers of wood and drawers of water. They are destined to remain exactly that if they do not develop a sophisticated technology that allows them to process their own resources and to develop their own high-technology industries.

Politicians recognize that and on the provincial and federal level are starting to do something about it. Pat McGeer, B.C. minister for science and the universities, has initiated the Discovery Foundation to establish research parks in which top scientists in high-technology industries can work in a fertile scientific environment. If all goes well, their research will create more active universities and more jobs in high-technology industries.

On the federal level, Science Minister Heward Grafftey has promised a 32-per cent increase for university research. And the government has promised to increase federal spending on research to 2.5 per cent of the GNP by the late 1980s.

After years of nervousness about Canadian neglect of research, the will seems finally to have developed on all levels to correct the problem. It is a massive project, given the current dilapidated state of the sciences. Even if all the possible resources of universities, industry, and government are mustered, the recovery will be a long one. All the more reason to start now.

MEMORIAL UNIVERSITY OF NEWFOUNDLAND

FACULTY OF ENGINEERING AND APPLIED SCIENCE DEAN

Memorial University invites applications for the position of Dean of the Faculty of Engineering and Applied Science. The appointment will be effective August 1, 1980 and is for a term of five years, renewable. Candidates must be capable of giving distinguished academic and administrative leadership to this rapidly developing faculty with a cooperative undergraduate program and graduate programs at the masters and doctoral level.

Applications will be treated with confidence and should be sent by March 1, 1980 to: Dr. Ian Rusted, Vice-President for Health Sciences and (Acting) Professional Schools, Memorial University of Newfoundland, St. John's, Newfoundland, A1B 3X6; or to Secretary of the Search Committee for a Dean, Faculty of Engineering and Applied Science, Memorial University of Newfoundland, St. John's, Newfoundland A1B 3X5.

C.A.U.T. INCOME TAX GUIDE 1979

Preface notes

1. All references are to the Income Tax Act except as where otherwise noted.
2. The figures in the 'French' quotation marks (« ») refer to the corresponding sections of the Taxation Act of the Province of Quebec.
3. For constitutional reasons, there is no withholding tax levied by the Province of Quebec on the rental or other income of non-residents, hence there are no corresponding sections in the Taxation Act of the Province of Quebec.
4. There is no treaty that binds the Province of Quebec with a foreign country. However, section 386 of the Quebec Taxation Act and Regulation 386.1 made thereunder give effect in Quebec to the principles embodied in the treaties that Canada has signed. Consequently, income of non-residents exempted under a Canadian treaty will not be subject to Quebec income taxes.
5. Interpretation bulletins (which are not technically binding on the government but which will probably be followed by it) as issued by the Department of National Revenue, Taxation, will be referred to by the Department's issue number, i.e., 'IT-221'.
6. Pending amendments to the Income Tax Act. At the time of writing, Bills C-17 and C-20 have not become law. In the following text passage into law of these proposed amendments has been assumed. (This provision now dependent on decisions taken by the government elected in the February 18 federal elections.)

The income tax consequences of the distinction between employment and business income.

The Income Tax Act contains no statutory definition of 'income' although Section 3 «23» does list the basic rules for computing the amount of a taxpayer's income for a taxation year. The Act distinguishes the various sources of income. The most important distinction for the majority of university teachers is that applied to income from an office or employment in contrast to income from a business or profession.

Employment income is the teacher's salary or other remuneration received by him for the performance of duties arising from his 'contract of service' as set out in sections 5 and 6 «26-27, 30-40». Section 8 «53-73» describes the expenditures which may or may not be deducted from employment income. Deductions allowable from employment income are specifically limited to those enumerated in this section. (Subsection 8 (2) «53».)

Business income (Section 9 «74-76») includes all remuneration received by a teacher for professional services rendered under a 'contract for services'.

A professor may find it to his advantage to consider the distinction between these two sources of income, as described below, because of the significant differences in the deductions which are allowable therefrom. In the case of income from an office or employment, only a restricted list of statutory deductions are permitted, whereas the recipient of business income may generally deduct any reasonable expenses other than payments on account of capital which were incurred for the purpose of earning the income. Amortization of capital costs is usually deduct-

ible in the form of capital cost allowances (depreciation), as provided by the Act.

Income from employment

A teacher's salary received as recompense for teaching and administrative duties is normally classified as income from employment. To this must be added fringe benefits which represent additional or supplemental remuneration for service. Fringe benefits are generally non-cash emoluments.

Interpretation Bulletin IT-71R enumerates the various common types of fringe benefits and indicates whether or not the value thereof should be included in the employee's income.

Studies dealing with the income tax implications of Wage Loss Replacement Plans (Long Term Disability) in particular and with fringe benefits in general are available from CAUT or OCUPA.

Examples of fringe benefits which must be included in income from employment are:

- a) premiums paid by a university to or on behalf of an employee for provincial hospitalization or medical care insurance plans;
- b) allowances for personal or living expenses received from his employer;
- c) the cost of an employee's personal use of an automobile owned or leased by his employer;
- d) wage loss benefits received out of a sickness or disability insurance plan maintained by the university. (Consult the study mentioned above for further details);
- e) that part of a premium paid by the university for group life insurance in excess of \$25,000;
- f) imputed interest on interest-free and low-interest loans made by an employer to an employee in certain circumstances after 1978. Interest on housing loans will still be a non-taxable benefit if the acquisition of the residence involves a change of residence and, in terms of law, the contributor has the right to deduct moving expenses. (Section 80.4) (IT421, paragraph 4). In Quebec, the imputed interest will be considered as income from employment in 1978 and after. Furthermore, contrary to the federal law, the housing loan is not exempt.

Examples of fringe benefits which need not be included in income are as follows:

- a) transportation to the job in cases where employers find it expedient to provide vehicles for transporting their employees from pick-up points to the location of employment at which, for security or other reasons, public and private vehicles are not welcome or practical;
- b) an employer's cost of providing recreational facilities for employees' use without charge or for a nominal fee;
- c) an employer's contributions to a private health services plan, including dental services for employees as well as the value of benefits flowing from the plans;
- d) moving expenses paid or reimbursed to an employee under certain prescribed circumstances;
- e) remission of tuition fees for courses taken by a university teacher or members of his family, other than his spouse, as long as the university does not issue receipts therefor;
- f) free parking provided for employees;
- g) a reimbursement of the costs of attending a convention where an employer requires an employee to attend in the line of duty associated with his employment;
- h) the employer's contributions to a wage loss replacement plan for employees. (See the study referred to above

for full details).

Income from a business

Many teachers provide services as independent contractors for their universities or for other institutions under a contract for services which is not an employment contract and which does not give rise to income from employment. Aside from his regular salary, a professor may derive income from royalties, consulting fees, writing lectures, appearances on television or radio, all of which are usually classed as income from a business or profession. In computing taxable income the teacher may deduct such expenses as are allowable from business or professional income.

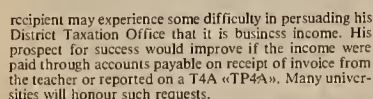
In addition to routine teaching duties a professor may teach special courses in summer or night programmes or in graduate school. Whether a contract of service (an employment contract) or a contract for services (a business contract) exists will depend upon the facts of each case. Revenue Canada, recently supported by the courts, has concluded that special teaching services are often performed under an employment contract particularly where subjects are taught under the same conditions and discipline as apply to courses in the regular curriculum.

However, in some circumstances, the teaching of non-credit courses may be performed under a non-employment arrangement. Some of the factors which provide evidence of a contract for services for the teaching of non-credit courses are as follows:

- a) A contract of service (employment) generally exists if the person for whom the services are performed has the right to control the amount, the nature and the direction of the work to be done and the manner of doing it. A contract for services (non-employment) exists when a person is engaged to achieve a prescribed objective and is given all the freedom he requires to attain the desired result. (From Interpretation Bulletin IT-312, paragraph 4.)
- b) Under a contract for services the teacher's discretion and responsibility for expenses incurred by him in providing the services should be clearly defined in a formal contract or exchange of correspondence.
- c) The employment of the services of others by a teacher in carrying out his contractual obligation is evidence of a contract for services.
- d) A contract for services may be implied where a teacher supplies services to more than one university or institution.

Many universities enter into separate contracts with teachers for these supplementary services. Where a university pays for such on invoice through accounts payable, or reports the income on the T4A «TP4A» form rather than on the T4 «TP4», such practice provides evidence that the university does not consider the remuneration to be employment income. Administratively, this greatly strengthens the teacher's position when he reports the fees as business income on his tax return, although it does not change the proper legal characterization of the relationship between the taxpayer and the payer.

A professor who teaches a specialty course within the university confines, but on behalf of an outside institution, would do well to arrange for payment directly from the sponsor. If the remuneration is channelled through university payroll and reported on the T4 «TP4» form the



Deductions from employment income

Section 8 «53-73» specifies the deductions which are permitted from employment income. Subsection 8(2) «53» contains the general limitation that, except as permitted by section 8, no other deductions are allowable. In contrast, all reasonable expenses of earning business or professional fee income are deductible for income tax purposes, except capital outlays which are generally amortizable.

a) *Employment expenses*—available to all employees up to 3% of employment income with a limit of \$250 (limit of \$500 per Bill C-17) «\$500 in Quebec» (Paragraph 8(1) «54»)

b) *legal expenses*—an employee may deduct legal expenses incurred in collecting salary from an employer or former employer. (Paragraph 8(1) (b) «71»).

c) *teachers' exchange fund*—a single amount in respect of all employments of the taxpayer as a teacher, not exceeding \$250 paid by him in the year to a fund established by the Canadian Education Association for the benefit of teachers from Commonwealth countries present in Canada under a teachers' exchange arrangement. (Paragraph 8(1) (d) «73»).

d) *travelling expenses*—incurred by an employee.

i) who is ordinarily required to carry on the duties of his employment away from his employer's place of business or in different places, or

ii) who has a contractual obligation to pay travelling expenses in the performance of his duties and for which he is not reimbursed by a travel allowance

Relevant situations might arise where a teacher participates in an exchange programme or is required to commute between two campuses at his own expense (Paragraph 8 (1) (h) «57»).

If the use of an automobile is involved, interest and capital cost allowances (depreciation) may be included in the travelling expense. (Paragraph 8(1) (j) «58»). (IT-272) (See "Automobile Expenses" below.)

In Quebec since 1978, the interest paid on a loan, made for the purchase of an automobile is only deductible if the automobile is used *exclusively to carry on the duties relating to employment*. Consequently, the interest cost of an automobile employed for both business and personal use is not deductible. This applies only in respect of the provincial income taxes of Quebec residents and not to their federal income taxes.

e) dues and other expenses of performing duties

i) dues for membership in professional societies are not deductible from employment income unless membership is a contractual obligation of employment or if the payment of the dues is necessary to maintain a professional status recognized by statute. If membership is a necessary expense of earning business or professional income the dues will be an allowable deduction therefrom. (Paragraph 8(1) (i) (ii) «62a»).

ii) faculty association fees qualify as union dues and are deductible from employment income. (Subparagraph 8(1)(i)(iv) «62b»).

iii) office rent, salary to an assistant or substitute, or cost of supplies if required to be paid by the employee by his contract of employment. (Paragraph 8 (1) (i); subparagraphs (ii) and (iii) «72»).

f) *unemployment insurance premium*—(Paragraph 8(1)(k) «64a»).

g) *Canada or Quebec Pension Plan contributions*—(Paragraph 8(1) (L) «64b»).

h) contributions to a registered pension plan (RPP)—up to \$3,500 (\$5,500 in Quebec) each year in respect of current services if retained by the employer from salary. (Paragraph 81(l) (m) 64c, 65n). If the employee's contractual contribution to the plan is less than \$3,500 (\$5,500 in Quebec) then all or part of the shortfall may be made up through voluntary contributions if the plan so provides.

Independently of the above, a teacher may, if his registered pension plan so permits, make additional voluntary contributions up to \$3,500 (\$5,500 in Quebec) a year in respect of past services. (Subsection 8(7) «67n»). This right to contribute the supplementary \$3,500 (\$5,500 in Quebec) is extended only to teachers and is not available if the teacher makes any contribution whatsoever to a registered retirement savings plan.

In other words, a teacher may put as much as \$7,000 (\$11,000 in Quebec) a year into his registered pension plan providing he makes no contribution to a registered retirement savings plan in respect of that year. If he puts as much as one dollar into a registered retirement savings plan then the overall limit for his contributions to both pension and savings plans drops to \$3,500.

i) contributions to a registered retirement savings plan (RRSP)—a teacher may choose to supplement his university pension by paying premiums into a registered retirement savings plan. Such premiums are deductible up to a limit of the lesser of 20% of his earned income and \$3,500; minus the amount of his registered pension fund contributions including voluntary contributions in respect of current services, if any.

Again, a caution that the payment of any premium, however small, into a registered retirement savings plan will invalidate the teacher's right to contribute an additional \$3,500 to his registered pension plan in respect of past services and his overall limit for both RPP and RRSP contributions will be set at \$3,500.

For non-members of a registered pension plan the limit is the lesser of 20% of earned income and \$5,500. (Subsection 146(5) «684»).

A taxpayer may also claim a deduction for payments into a retirement savings plan registered in the name of his spouse. In such cases, the limits described above will apply to the aggregate of his contributions to both plans. (Subsection 146(5.1) «684a»).

In the past, some taxpayers have contributed to deductible dollars to a spousal RRSP which would be immediately deregistered thus bringing the funds into the income of the spouse. Recent amendments now require two amounts contributed in the year and in the previous two years to a spousal plan must be included in the income of the contributor if withdrawn during the year. (Subsections 146(8.3), (8.5), (8.6), and (8.7) & 6896, 6898, 6899, 6899a). Interest on money borrowed to finance contributions to a registered retirement savings plan is deductible from income. Interest on borrowing in respect to contributions to a spousal plan is not deductible. The accumulated value of a pension is not treated as a pension on or after the annuitant's 60th birthday and before the end of the year in which he reaches age 71. The type and flexibility of the available pensions have recently been improved, subject to certain transitional provisions.

An article entitled "Income Tax and the Senior Citizen" has been published by CAUT and copies are available upon request from CAUT or OCUFA. The article deals with a number of income tax issues which are of particular interest to persons who are approaching, or who have reached retirement age.

plan (RHOSP)—an individual who does not own a house may contribute to a RHOSP up to \$1,000 a year for a total amount of \$10,000. The contributor must be a Canadian resident and may take advantage of such a plan only once. Contributions are deductible from income, and the earnings of the fund are not taxable. Withdrawals will not be taxed if applied to the purchase of a home. A number of RHOSP changes effective after December 31, 1978 are as follows:

(i) if a taxpayer resides with his spouse and the spouse owns a dwelling, the taxpayer is ineligible for a RHOSP. (Paragraphs 146.2(2) (g) «693d» and (5) «693ow»)

(ii) the right to purchase home furnishings with tax-free RHOSP funds has been withdrawn. (Subsection 146.2(6) «693q»).

(iii) a RHOSP may not be held for longer than 20 years.
(Subsection 146.2(8.1) «693x»).

RHOSP funds will escape tax entirely if used for their designated purpose; in contrast to the RRSP where the tax is merely deferred. If the RHOSP funds are not even-

tually put to their intended use they may be withdrawn subject to tax or may be transferred into an income averaging annuity. (Section 146.2 «693a-693w»). The right to transfer to an RRSP has been rescinded.

k) *moving expenses* are deductible only from the income of the new job and where the taxpayer has moved at least 25 miles closer to the new location. Expenses may include travel, transportation and storage of household effects, temporary lodging and meals, cancellation of a lease or cost of selling the former residence and in some circumstances the cost relating to the purchase of a new home. (Paragraph 62 (3)(f)(c)(i)(9)). There is a time limit of 15 days in respect of temporary lodging and meals and only moves within Canada qualify (Section 62(3)(6)-(3)(9)). (See Rev. Can. Tax pamphlet "Moving Expenses" and IT-178).

1) *child care expenses* may normally be claimed only by the mother although the father may be eligible under certain circumstances. Costs of baby sitting or day nursery services, lodging at a boarding school or camp qualify if they conform to the specified rules and are within the stated limits. Expenses must be incurred for the purpose of permitting the claimant to be employed or carry on a business. Only taxpayers resident in Canada, including those deemed resident (Paragraph 250(1) (a) under the Income Tax Act, may claim child care expenses. Non-residents temporarily on foreign leave are not eligible even though they are deemed employed in Canada and are tax-resident in Canada. In other words, Canadian salaried executives who remain resident in Canada may deduct child care expenses but those who become non-resident may not. (Section 63 +320-325). (See Rev. Can. Tax pamphlet "Child Care Expenses").

Deductions from business income

Generally speaking, a taxpayer may deduct from business income those current expenses or costs which were incurred by him in order to earn the income, provided that the expense is reasonable, is not in the nature of a personal or living expense and is not for the purpose of obtaining a permanent asset of an enduring value, i.e., a capital outlay. Normally, allowable expenses must be incurred or paid during the same taxation year in which the income was earned.

Typical examples of expenses incurred by teachers to earn business income are books, journals, travelling, office supplies and facilities, telephone, postage, typing, photocopying and wages for part-time help. They must be prepared to document such expenses if requested to do so.

The computation of office expenses and the cost of the use of an automobile may be rather complex and will be described in some detail, as follows:

Office expenses

If a professor requires an office to earn business income and uses the office exclusively for earning business income, he may establish one in his home and deduct the proportion of total expenses reasonably related to earning the business income. If the house has eight rooms of which the office is one of average size, then one-eighth of all costs of maintaining the residence may be deductible.

The maintenance costs of the office may include a reasonable proportion of the realty taxes, repairs, redecorating, insurance, heat, light, water, cleaning and mortgage interest. Capital cost allowances (depreciation) on the office portion of the house are also deductible but it is recommended that they not be claimed, for the following reasons:

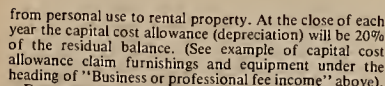
(a) capital cost allowances are subject to recapture upon the sale of the property, upon its conversion back to personal use, if no actual depreciation has occurred. Under present inflationary conditions depreciation in value is very unlikely to occur, which would nullify any advantage gained by claiming the allowances;

(b) a taxpayer who claims capital cost allowance renders himself liable to taxable capital gains upon the office portion of his home when he sells or converts to personal use. Full exemption from capital gains tax under the principal residence rule will be preserved if the taxpayer refrains from claiming capital cost allowance. (See IT-120R, paragraphs 27, 28 and 29).

Capital cost allowances on furniture and equipment may safely be deducted if the owner is confident that depreciation in the amount being claimed will actually occur during the period of business use. The rate under Class 8 is 20% and is applied to the fair market value at the time they were converted from personal to business use or at cost if acquired directly for business purposes. At the close of each year the capital cost allowance (depreciation) will be deducted from the capital value of

3

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For example, suppose a teacher rented his residence containing furnishings valued at \$10,000 on September 1, 1978 under a lease running from September 1, 1978 to August 31, 1979. He would be entitled to claim capital cost allowances of \$2,000 (20% of \$10,000) from rental income received during the period September 1, 1978 to December 31, 1978. However, if the fair market value of the furnishings on August 31, 1979 turns out to be greater than \$8,000 (\$10,000 minus capital cost allowance of \$2,000) then any excess of market value over \$8,000 will be recuperated in 1979. If the fair market value should exceed \$10,000 then taxable capital gains would also apply in 1979. The teacher will be entitled to no capital cost allowance for 1979 in any event since the property was not in use as a business asset on December 31, 1979.

Canadian rental income of residents

Summary of advantages of non-resident status

The advantage of becoming a non-resident for tax purposes has been substantially diminished by the new Act but the following advantages remain:

(b) Withholding tax is applied to investment income paid or credited to non-residents at rates likely to be lower than the marginal rates imposed upon residents.

(c) Net rental income will probably be taxed at lower rates to non-residents than to residents.

(d) Non-residents may de-register Canadian registered retirement savings plans at a lower income tax rate than that applied to residents.

(e) Upon becoming non-resident a taxpayer acquires certain options regarding capital gains on his investments which, if judiciously selected, may result in less capital gains tax than he would pay as a resident.

Before seeking to establish non-resident status, a teacher should consider the combined effect upon his interests of both Canadian and foreign income taxes. Some of Canada's international tax agreements permit Canadians to do research in treaty countries free of foreign income tax on Canadian grants and sabbatical salaries. Some of the countries also exempt income derived from teaching within their borders. Similar exemptions from Canadian income tax are extended by Canada to foreign nationals teaching or pursuing research here.

Some of the issues of consequence to Canadians who plan to go abroad are discussed in the following sections. Individuals temporarily absent from Canada should take note that the use of general averaging as a formula for spreading of income is not available to non-residents.

Canada is currently engaged in extensive tax treaty negotiations and, in some instances, renegotiations. As of November 1, 1979, Canada has ratified and pro-

clained in force tax treaties with Australia, Belgium, Denmark, Dominican Republic, Finland, France, Germany, Ireland, Israel, Jamaica, Japan, Morocco, Netherlands, New Zealand, Norway, Pakistan, Philippines, Singapore, South Africa, Sweden, Switzerland, Trinidad and Tobago, the United Kingdom and the United States. Revised treaties have been signed with Germany, Ireland, Israel, Japan, the Netherlands, Norway, Pakistan, the United Kingdom and the United States but have not yet been proclaimed in force. In the meantime, the current agreements with these three countries remain in effect. New treaties have been negotiated with Austria, Indonesia, Italy, Korea, Liberia, Malaysia, Romania, Russia and Spain but have not been proclaimed in force.

The basic purpose of these treaties is to avoid double taxation and prevent tax evasion. Invariably, a treaty will contain provisions that determine which of the contracting states will tax income from certain specific sources.

A teacher will remain a resident of Canada for income tax purposes will be taxed by Canada on his world income although the Canadian Income Tax Act gives him the right to claim tax credits in respect of any foreign income taxes regardless of whether or not a tax treaty exists between the two countries. Generally speaking, the foreign tax credit allowed by Canada will be the foreign tax paid, or the Canadian tax allocable to the foreign income, whichever is the lesser. As a result, a teacher who remains Canadian residency will be taxed only once on his foreign-source income but at the higher of the Canadian and foreign tax rates.

Elimination of double taxation

A teacher who becomes a non-resident of Canada but who continues to be taxed by Canada on sabbatical salary and grants is very unlikely to experience double taxation. If a foreign jurisdiction imposes a tax on such income the teacher will be exempted from Canadian income tax by virtue of clause 115 (2) (e) i)(A) ("§166") of the Act. (IT-161R, paragraph 1a). When a teacher first learns that his employer has imposed on *his* income *he should* induce his employer to apply to his District Taxation Office for a waiver of tax deduction on its source and avoid the immediate cash drain of a Canadian withholding tax which in the normal course of events would be refunded. (IT-161R, paragraph 5.)

The O.E.C.D. Model Convention

For the most part, Canada's various tax agreements follow an internationally recognized form. In fact, a new Model Convention for the avoidance of double taxation was adopted by the Organization for Economic Co-operation and Development (O.E.C.D.) at Paris on April 29, 1977. Canada is a member of O.E.C.D. and many of Canada's tax treaties, particularly those recently negotiated, follow this model.

The Model Convention contains the following articles which may be of interest to teachers and students.

Article 4: Resident—The laws of each Contracting State will determine the meaning to be attached to the term "resident" for income tax purposes within that State. The term will not apply to a person who is liable to tax in a State only because he has income from sources in that State or capital situated therein.

In the event of a person being classed as a resident of both Contracting States, various criteria are stipulated to determine his resident status. These are, location of a permanent home, habitual abode and nationality. If these criteria are not decisive then the two States will settle the question by mutual agreement.

Article 14: Independent personal services—Income derived by a resident of State 'A' in respect of independent personal services shall be taxable only in State 'A' unless he has a fixed base regularly available to him in State 'B'. In the latter case, State 'B' may tax such income as is attributable to that fixed base. The term 'fixed base' is not

defined in the model convention but Revenue Canada is not prepared to accept the position of the Minister. The Minister has offered the opinion that it may be described as a 'centre of activity of a fixed or permanent character which should be regularly available to the person who is carrying out the activities. Furthermore, the person carrying on the activities should normally be in a position to exert a measure of control over the "fixed base"'. Independent personal services include such activities as consulting, research and other services rendered under a non-employment type of contract where the person is not usually in the form of an employee, and is not paid a salary or wages. Fellowships, bursaries and sabbatical salaries are normally classified as non-employment income for treaty purposes.

Article 15: Dependent personal services—Salary or wages

derived by a resident of State 'A' in respect of an employment shall be taxable only in State 'A' unless the employment is exercised in State 'B' in which case it may be taxed in State 'B' subject to the following conditions:

The employment income of a resident of State 'A' earned in State 'B' will be taxable only in State 'A' if:

a) the recipient is present in State 'B' for not more than 183 days in the fiscal year, and

b) the remuneration is paid by an employer who is not a resident of State 'B', and

c) the remuneration is not borne by a permanent establishment or fixed base which the employer has in State (P)

Article 19: Government service—Salaries paid to residents by State 'A' present in State 'B' for the purpose of performing services in discharge of government functions shall be taxable only in State 'A'. Where such services are rendered by nationals of State 'B' or by persons who did not become residents of State 'B' solely for the purpose of rendering the services will be taxable only in State 'A'.

Article 20: Students—A student resident of State 'A' who visits State 'B' to study will not be taxed by State 'B' on maintenance funds received from sources outside State 'B' regardless of whether he remains a resident of State 'A' or becomes a non-resident.

General provisions

International treaties permit a taxing state to apply its own taxation laws and residency requirements as long as they do not conflict with the treaty. They may give rise to complications because of the differences in what is treated as income between contracting states, placing an onus upon visitors to acquire some understanding of the local income tax laws and practices. However, the practical implications of Articles 14, 15, 19 and 20 appear to be that a teacher or student visiting a treaty country to carry on research or study will not be taxed in that country upon the funds received from outside sources during his visit. On the other hand, a teacher or student will be taxed in that country on salary or wages earned therein, subject to the exceptions of Article 15.

Special exemption for teaching remuneration

The Model Convention no longer contains the provision by which one state will permit residents of another state to teach within its borders for a period of two years free of tax on their teaching income. The Department of Finance has declared that this privilege will not be included in any new tax treaties nor in any renegotiation of existing treaties.

As of November 1, 1978 this reciprocal exemption still prevails only in Canada's treaties with Australia, Denmark, Finland, Germany, Ireland, Japan, the Netherlands, New Zealand, Norway, South Africa, Sweden, Trinidad and Tobago, The United Kingdom and the United States.

Teachers visiting Canada from the foregoing countries will be subject to a withholding at source on teaching income and deductions for Canada Pension Plan and must file income tax returns. If, and when, a teacher's temporary stay in Canada is terminated he may apply for a refund of taxes paid on his teaching income and his Canada Pension Plan contributions. Because of the particular wording of the tax treaties involved, visitors from the United States, Finland and Australia may remain beyond the two-year limit and still qualify for the exemption as long as they teach for no longer than two years. (IT-68R, paragraph 3). The Jamaican agreement grants the two-year exemption to Canadians teaching in Jamaica but not to Jamaicans teaching in Canada. New treaties which have eliminated the two-year teaching exemption have been negotiated with Germany, Jamaica and the United Kingdom but have not been proclaimed in force as of November 1, 1979.

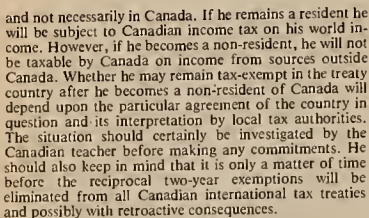
Residents of treaty countries teaching in Canada

A professor from a treaty country who is teaching in Canada should take note of his position with regard to income taxes in his homeland as well as his Canadian situation. These international agreements may provide exemption from Canadian tax on the teaching income of residents of the contracting states but may not absolve such individuals from liability for income taxes at home.

Canadian residents teaching in treaty countries

The agreements with the fourteen countries mentioned above, plus the Jamaican agreement, permit Canadians to teach temporarily in their territories for a period up to two years free of domestic taxes upon their teaching income. Professors planning to teach in any of these countries on a tax-exempt basis should enquire about the interim exemption arrangements which may be quite different from those applied in Canada.

The Canadian should bear in mind that the agreement exempts him from income tax only in the foreign country



1. The United States

1. The United States

It is pertinent to note that if a person is a candidate for a degree at an American university, all amounts received as a scholarship or fellowship grant may be excluded from income for U.S. tax purposes regardless of whether the source is from within or outside the United States. However, any portion of the grant which represents compensation for teaching, research or other employment required as a condition of receiving the grant must be included in income unless all degree candidates must perform similar services. If a person is not a candidate for a degree, then a grant is taxable if the amount of the grant is taxable to the extent it exceeds \$300 per month multiplied by the number of months for which the grant has been received during the year. The \$300 monthly exclusion from income is available only if the grant is made by a non-profit organization that is exempt from U.S. income tax, by the government of the U.S., or one of its agencies, or a state government, or by an international organization or a binational or multinational educational and cultural organization under the Mutual Educational and Cultural Exchange Act of 1961. The exclusion is limited to a total of 36 months, otherwise the entire amount of the scholarship or fellowship grant is subject to U.S. income tax. Scholarship and fellowship grants received by a student from a source in Canada who is not an alien of the United States from a source in Canada would not be subject to U.S. tax unless they are regarded as compensation for services performed in the United States.

Article VII—Compensation for personal services: The Canada-U.S. Tax Convention provides that if a Canadian resident is present in the United States for a period not exceeding a total of 183 days in the taxation year, he is exempt from U.S. tax upon the compensation for services performed during that year in the United States if either of the following conditions is met:

a) compensation does not exceed \$5,000, or
b) the compensation is received from a Canadian resident,
corporation or other Canadian entity or from a Canadian
permanent establishment of a U.S. enterprise (in which
case there is no dollar limit on the exemption).

Article XVIII—Professors and teachers: The tax treaty also provides that a professor who is resident in Canada and who temporarily visits the United States for the purpose of teaching for a period not exceeding two years at an educational institution in the United States is exempt from tax on his remuneration for teaching for such period. It should be noted that the treaty refers to Canadian residents and therefore he who becomes a non-resident of Canada during his leave in the United States might prejudice his position although no cases of this eventuality have actually come to light.

Article IX—Students: Canadian students on temporary stay in the U.S. for the purpose of study shall not be taxable by the U.S. on remittances received by them from

Canada for purposes of their maintenance or studies.

2. The United Kingdom

2. The United Kingdom
As mentioned above a new tax treaty has been negotiated with the United Kingdom which when ratified, will have consequences retroactive to 1976. In the meantime, the current agreement continues in effect and contains the following provisions of interest to visitors from Canada to the United Kingdom and vice versa.

Article 13—Independent personal services: (See Article 14 of the Model Convention above.) Income earned in the U.K. by a resident of Canada under a non-employment type of contract shall be taxed in Canada unless the visitor has a fixed base in the U.K. If such incomes should be taxed by the U.K., the individual may then claim a foreign tax credit from this Canadian tax. If the U.K. rate for tax is higher than the corresponding Canadian rate then only the lesser of the two rates will be allowed as a credit by Canada. If the visitor becomes a *non-resident* of Canada he shall not be taxed on his U.K. source income by Canada but will possibly be taxed thereon by the U.K.

Article 14—Income from employment: (See Article 15 of the Model Convention above.) If the employment is exercised in the U.K. by a resident of Canada, it may be taxed in the U.K. However, salary from the U.K. employment shall continue to be taxed only in Canada if the following conditions prevail:

- a) the recipient is present in the U.K. for not more than 183 days during the U.K. taxation year which runs from April 6 of one year to April 5 of the next, and
- b) the remuneration is paid by or on behalf of an employer who is not a resident of the U.K., and
- c) the remuneration is not deducted from the profits of a permanent establishment of fixed base which the employer has in the U.K.

Article 17—Government service: (See Article 19 of the Model Convention above). Salary paid by Canada to an individual present in the U.K. solely for the purpose of performing services in Canada in discharge of a government function shall be taxable only in Canada.

ment (full-time salaries taxable only in Canada).
Article 18—Professors and teachers. A teacher at a Canadian university or college, or a teacher at a Canadian educational institution for a period not exceeding two years shall be exempt from U.K. tax on his teaching remuneration. Unlike the corresponding provision of Article VIIIA of the Canada—U.S. Tax Convention, the exemption applies regardless of whether he remains a resident of Canada or becomes a non-resident. If he remains a resident of Canada for tax purposes he shall, of course, be taxable by Canada on his world income. If he becomes a non-resident he shall escape income tax in both countries on his U.K. teaching income.

Article 19(2)—Allowances for research: After an extended period of uncertainty, the income tax position of a professor doing research in the U.K. has been clarified. Inland Revenue of the U.K. has confirmed that an individual who is, or was before visiting the U.K., a resident of Canada will not be taxed in the U.K. on any grant, allowance or award for the primary purpose of research for a period not exceeding two years from a governmental, religious, charitable, scientific, literary or educational organization in Canada. Sabbatical salaries qualify as allowances.

The new treaty follows more closely the O.C.E.D. Model Convention. The basic changes affecting Canadian teachers visiting the U.K. are the elimination of the two-year teaching exemption and the allowance for research as described in Article 18 and 19(2) above. Under the new treaty, Articles 14 and 15 of the Model Convention will largely apply. Remuneration for teaching will likely be taxed in the country where the services are performed. Research grants and allowances will probably be taxed in the country where they originate.

Since some aspects of the new treaty will be retroactive to 1976 the question of reassessments may arise. However, section 4 of Article XXVIII provides that where an adverse tax treatment arises under the new Convention the old Agreement will apply in respect of taxation years commencing before entry into force of the 1978 Convention. This means that individuals currently visiting either country from the other in order to teach or carry on research will likely be taxed according to the terms of the existing Agreement.

3. France

The Canada-France Tax Convention (1975) substantially follows the O.E.C.D. Model Convention.

Article XIV—Professional services: is almost identical to Article 14 of the Model Convention. Income derived by a resident of Canada from *independent* professional services performed in France will be taxed only in Canada unless the professional operates from a fixed base regularly available to him.

Article XV—Dependent personal services: provides that

salary or wages earned by a resident of Canada in France will be taxed by France unless the recipient is present in France for not more than 183 days in the calendar year and either (a) the remuneration does not exceed the greater of 2,500 Canadian dollars and 10,000 French francs or (b) the remuneration is paid by, or on behalf of, an employer who is not a resident of France, and such remuneration is not borne by a permanent establishment of a fixed base which the employer has in France.

Article XIX—Government services: follows closely the Model Convention. In general, residents of Canada performing government services in France for Canada will be taxed only by Canada.

Article XX—Students: Canadians visiting France solely for study or training will not be taxed by France on maintenance or educational funds received from outside sources regardless of whether they remain resident of Canada or become non-residents. **Professors and teachers:** The two-year tax holiday on teaching income still available in the U.S. and U.K. treaties is absent from the new Canada-France Tax Convention.

French residential tax: All persons of whatever nationality who maintain a regular residence in France are considered to be liable for taxation in France. The following are regarded as maintaining a regular residence:

a) all persons who possess a dwelling for their use, either as owner, enjoying the use of, as lessee, whenever in the latter case the lease is concluded either by a single agreement or by successive agreements for a continuous period of not less than one year.

b) all persons who, without having at their disposal in France a dwelling under the conditions defined in (a) of the above paragraph, but who, notwithstanding, have their principal place of abode in France. Although this idea of principal abode is not defined by law, it is generally considered that an alien has his principal abode in France whenever he remains there continuously for more than six months of a given year.

It appears to follow that a Canadian professor, spending his sabbatical year in France will be regarded as a French resident and subject to French income tax.

Sabbaticans returning to France report that only if they have had income from sources within France has any French tax been levied. However, a person who is resident in France but not permanently resident in France may be subject to an individual income tax on the higher of actual income from French sources or a presumed income in an amount equal to five times the rental value of his residence in France under article 164 of the French Tax Code. It appears that article 164 has not been used to tax professors on sabbatical leave and that its function is to levy a tax on persons who maintain luxurious secondary residences in France over substantial duration.

Article XXIII—Elimination of double taxation: provides that a Canadian visitor to France may be subject to tax by either France or Canada, but not by both. Canada will recognize tax payable under French law as a deduction from Canadian tax payable in respect of the related income. France will exempt income taxable in Canada from French taxes.

General conclusion: Since the U.S., U.K. and French treaties are reciprocal the various tax impositions and exemptions will largely apply in reverse to residents of these countries visiting Canada. They will, however, be subject to Canadian income tax law and interpretations except where a conflict exists between local tax law and the treaty in which case the provisions of the treaty will prevail.

A Final Note

The Committee recommends that any CAUT members having problems concerning the application of the tax act go to their local DNR Taxation Office. If you feel that you have not been dealt with fairly by the Taxation Office, you may submit the problem to the CAUT although the CAUT will only take up your case if it represents a general and unsolved problem. The CAUT intends to go to DNR in order to establish rulings and regulations which are nationally consistent.

The Association is well aware that this Guide does not cover all income tax problems faced by all university teachers. The CAUT intends to carry on its work and complete or amend the guide by publishing regularly the results of its work in the *CAUT Bulletin*.

The Income Tax Guide for 1979 was prepared by Charles Hebdon, a professional officer, consultant on economic affairs at CAUT and OCUFA, with the help of M. James Drew (Hautes Etudes Commerciales) and Robert Léger (CAUT).

Traites fiscales internationales

Le Canada est en train de négocier et, dans certains cas, de conclure des traités fiscaux avec d'autres pays. Ces traités ont pour but d'éviter la double imposition et de faciliter les échanges économiques entre les pays.

Les personnes temporairement absentes du Canada doivent déclarer leur revenu au Canada. Si elles ont des revenus dans un autre pays, elles doivent déclarer ces revenus dans leur déclaration canadienne. Les traités fiscaux internationaux visent à éviter la double imposition des revenus.

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Credit d'impôt canadien à l'égard d'impôts étrangers

Le professeur qui demeure un résident du Canada aux fins de l'impôt paie l'impôt canadien sur son revenu mondial. Si le professeur a des revenus dans un autre pays, il peut bénéficier d'un crédit d'impôt pour les impôts payés dans ce pays.

Exemption spéciale de la rémunération professionnelle

Le professeur qui est un résident du Canada aux fins de l'impôt peut bénéficier d'une exemption spéciale de la rémunération professionnelle. Cette exemption s'applique aux revenus provenant de l'enseignement.

Au Québec, la loi a changé en ce qui concerne les frais d'automobile. (Voir "d) Frais de déplacement", ci-

...déclarer son revenu d'entreprise, ce qui peut amener la remise à plus tard de paiements d'impôt sur le revenu

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